```
  1                       M   A   P   L   C   P   S   P   W   L   P   L      12
  1  ACA GTC AGC CGC ATG GCT CCC CTG TGC CCC AGC CCC TGG CTC CCT CTG      48

 13   L   I   P   A   P   A   P   G   L   T   V   Q   L   L   L   S      28
 49  TTG ATC CCG GCC CCT GCT CCA GGC CTC ACT GTG CAA CTG CTG CTG TCA      96

 29   L   L   L   L   M   P   V   H   P   Q   R   L   P   R   M   Q      44
 97  CTG CTG CTT CTG ATG CCT GTC CAT CCC CAG AGG TTG CCC CGG ATG CAG     144

 45   E   D   S   P   L   G   G   G   S   S   G   E   D   D   P   L      60
145  GAG GAT TCC CCC TTG GGA GGA GGC TCT TCT GGG GAA GAT GAC CCA CTG     192

 61   G   E   E   D   L   P   S   E   E   D   S   P   R   E   E   D      76
193  GGC GAG GAG GAT CTG CCC AGT GAA GAG GAT TCA CCC AGA GAG GAG GAT     240

 77   P   P   G   E   E   D   L   P   G   E   E   D   L   P   G   E      92
241  CCA CCC GGA GAG GAG GAT CTA CCT GGA GAG GAG GAT CTA CCT GGA GAG     288

 93   E   D   L   P   E   V   K   P   K   S   E   E   E   G   S   L     108
289  GAG GAT CTA CCT GAA GTT AAG CCT AAA TCA GAA GAA GAG GGC TCC CTG     336

109   K   L   E   D   L   P   T   V   E   A   P   G   D   P   Q   E     124
337  AAG TTA GAG GAT CTA CCT ACT GTT GAG GCT CCT GGA GAT CCT CAA GAA     384

125   P   Q   N   N   A   H   R   D   K   E   G   D   D   Q   S   H     140
385  CCC CAG AAT AAT GCC CAC AGG GAC AAA GAA GGG GAT GAC CAG AGT CAT     432

141   W   R   Y   G   G   D   P   P   W   P   R   V   S   P   A   C     156
433  TGG CGC TAT GGA GGC GAC CCG CCC TGG CCC CGG GTG TCC CCA GCC TGC     480

157   A   G   R   F   Q   S   P   V   D   I   R   P   Q   L   A   A     172
481  GCG GGC CGC TTC CAG TCC CCG GTG GAT ATC CGC CCC CAG CTC GCC GCC     528
```

FIG._1A

```
173   F   C   P   A   L   R   P   L   E   L   L   G   F   Q   L   P     188
529   TTC TGC CCG GCC CTG CGC CCC CTG GAA CTC CTG GGC TTC CAG CTC CCG     576

189   P   L   P   E   L   R   L   R   N   N   G   H   S   V   Q   L     204
577   CCG CTC CCA GAA CTG CGC CTG CGC AAC AAT GGC CAC AGT GTG CAA CTG     624

205   T   L   P   P   G   L   E   M   A   L   G   P   G   R   E   Y     220
625   ACC CTG CCT CCT GGG CTA GAG ATG GCT CTG GGT CCC GGG CGG GAG TAC     672

221   R   A   L   Q   L   H   L   H   W   G   A   A   G   R   P   G     236
673   CGG GCT CTG CAG CTG CAT CTG CAC TGG GGG GCT GCA GGT CGT CCG GGC     720

237   S   E   H   T   V   E   G   H   R   F   P   A   E   I   H   V     252
721   TCG GAG CAC ACT GTG GAA GGC CAC CGT TTC CCT GCC GAG ATC CAC GTG     768

253   V   H   L   S   T   A   F   A   R   V   D   E   A   L   G   R     268
769   GTT CAC CTC AGC ACC GCC TTT GCC AGA GTT GAC GAG GCC TTG GGG CGC     816

269   P   G   G   L   A   V   L   A   A   F   L   E   E   G   P   E     284
817   CCG GGA GGC CTG GCC GTG TTG GCC GCC TTT CTG GAG GAG GGC CCG GAA     864

285   E   N   S   A   Y   E   Q   L   L   S   R   L   E   E   I   A     300
865   GAA AAC AGT GCC TAT GAG CAG TTG CTG TCT CGC TTG GAA GAA ATC GCT     912

301   E   E   G   S   E   T   Q   V   P   G   L   D   I   S   A   L     316
913   GAG GAA GGC TCA GAG ACT CAG GTC CCA GGA CTG GAC ATA TCT GCA CTC     960

317   L   P   S   D   F   S   R   Y   F   Q   Y   E   G   S   L   T     332
961   CTG CCC TCT GAC TTC AGC CGC TAC TTC CAA TAT GAG GGG TCT CTG ACT    1008

333   T   P   P   C   A   Q   G   V   I   W   T   V   F   N   Q   T     348
1009  ACA CCG CCC TGT GCC CAG GGT GTC ATC TGG ACT GTG TTT AAC CAG ACA    1056
```

FIG._1B

```
 349   V   M   L   S   A   K   Q   L   H   T   L   S   D   T   L   W    364
1057  GTG ATG CTG AGT GCT AAG CAG CTC CAC ACC CTC TCT GAC ACC CTG TGG  1104

 365   G   P   G   D   S   R   L   Q   L   N   F   R   A   T   Q   P    380
1105  GGA CCT GGT GAC TCT CGG CTA CAG CTG AAC TTC CGA GCG ACG CAG CCT  1152

 381   L   N   G   R   V   I   E   A   S   F   P   A   G   V   D   S    396
1153  TTG AAT GGG CGA GTG ATT GAG GCC TCC TTC CCT GCT GGA GTG GAC AGC  1200

 397   S   P   R   A   A   E   P   V   Q   L   N   S   C   L   A   A    412
1201  AGT CCT CGG GCT GCT GAG CCA GTC CAG CTG AAT TCC TGC CTG GCT GCT  1248

 413   G   D   I   L   A   L   V   F   G   L   L   F   A   V   T   S    428
1249  GGT GAC ATC CTA GCC CTG GTT TTT GGC CTC CTT TTT GCT GTC ACC AGC  1296

 429   V   A   F   L   V   Q   M   R   R   Q   H   R   R   G   T   K    444
1297  GTC GCG TTC CTT GTG CAG ATG AGA AGG CAG CAC AGA AGG GGA ACC AAA  1344

 445   G   G   V   S   Y   R   P   A   E   V   A   E   T   G   A   *    460
1345  GGG GGT GTG AGC TAC CGC CCA GCA GAG GTA GCC GAG ACT GGA GCC TAG  1392

1393  AGG CTG GAT CTT GGA GAA TGT GAG AAG CCA GCC AGA GGC ATC TGA GGG  1440

1441  GGA GCC GGT AAC TGT CCT GTC CTG CTC ATT ATG CCA CTT CCT TTT AAC  1488

1489  TGC CAA GAA ATT TTT TAA AAT AAA TAT TTA TAA T                    1522
```

FIG._1C

FIG._1

FIG._1A
FIG._1B
FIG._1C

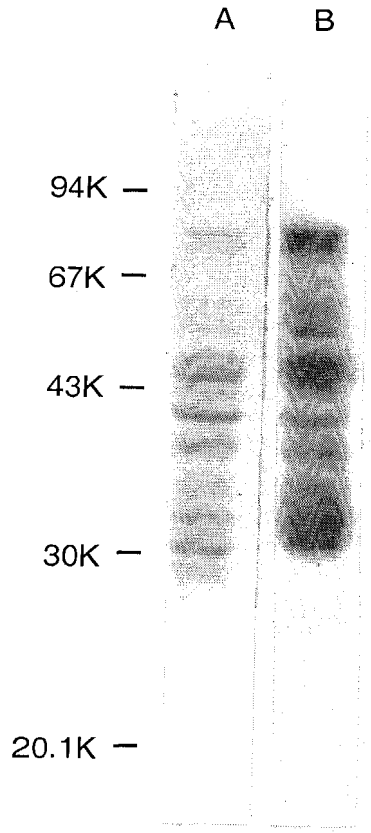


FIG._2

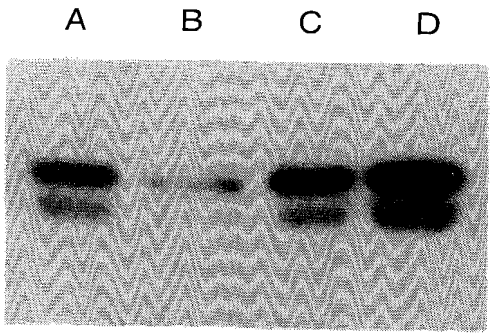


FIG._3

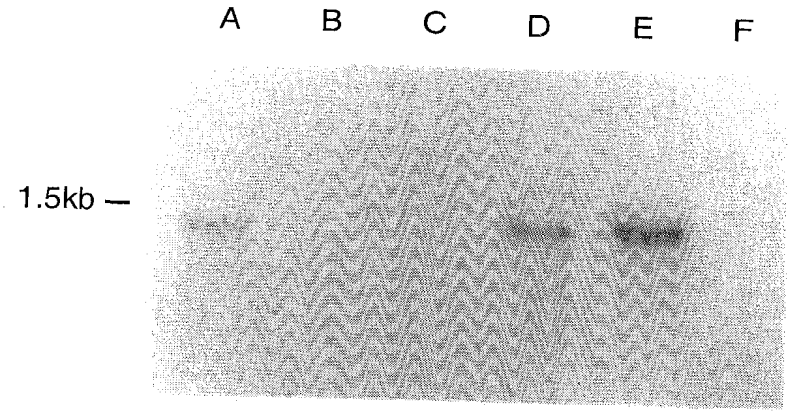


FIG._4

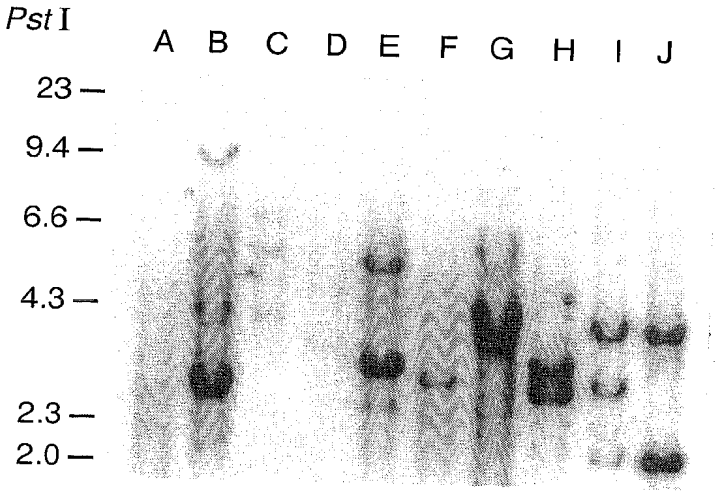


FIG._5

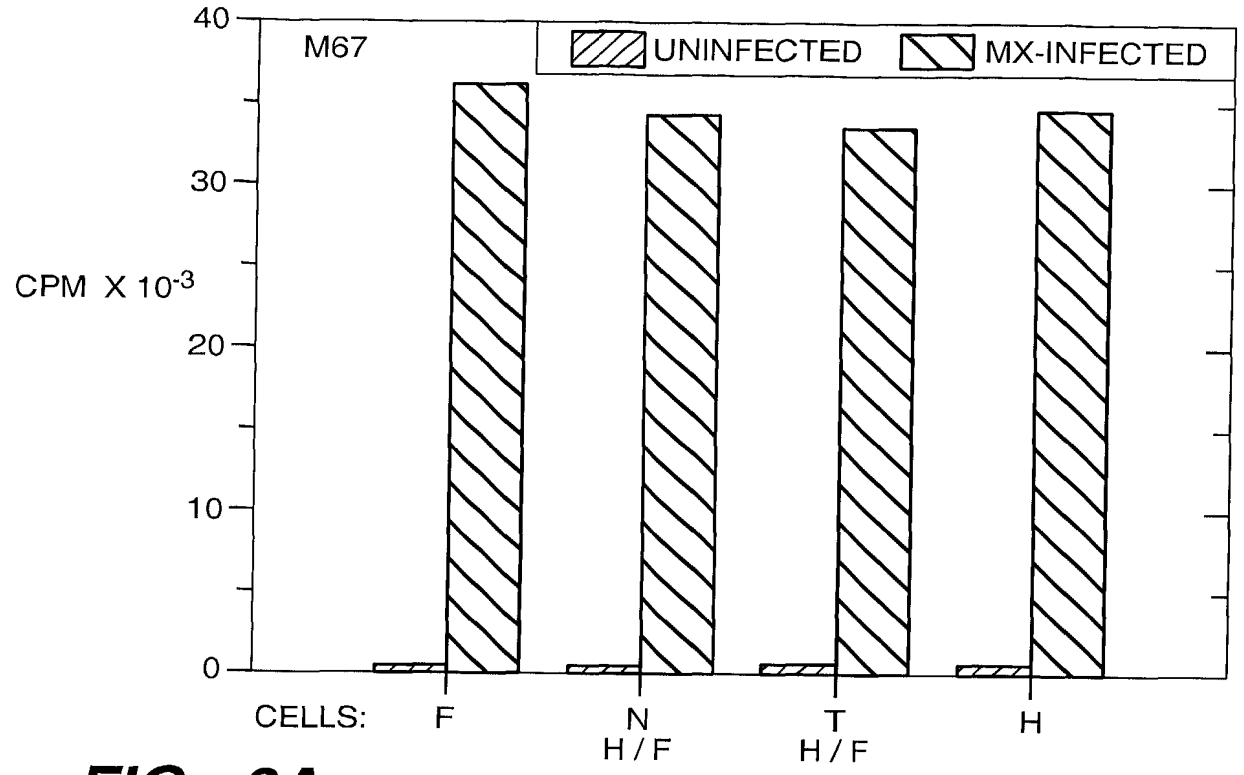

M67
UNINFECTED
MX-INFECTED
CPM X 10-3
40
30
20
10
0
CELLS:
F
N
H / F
T
H / F
H

FIG._6A

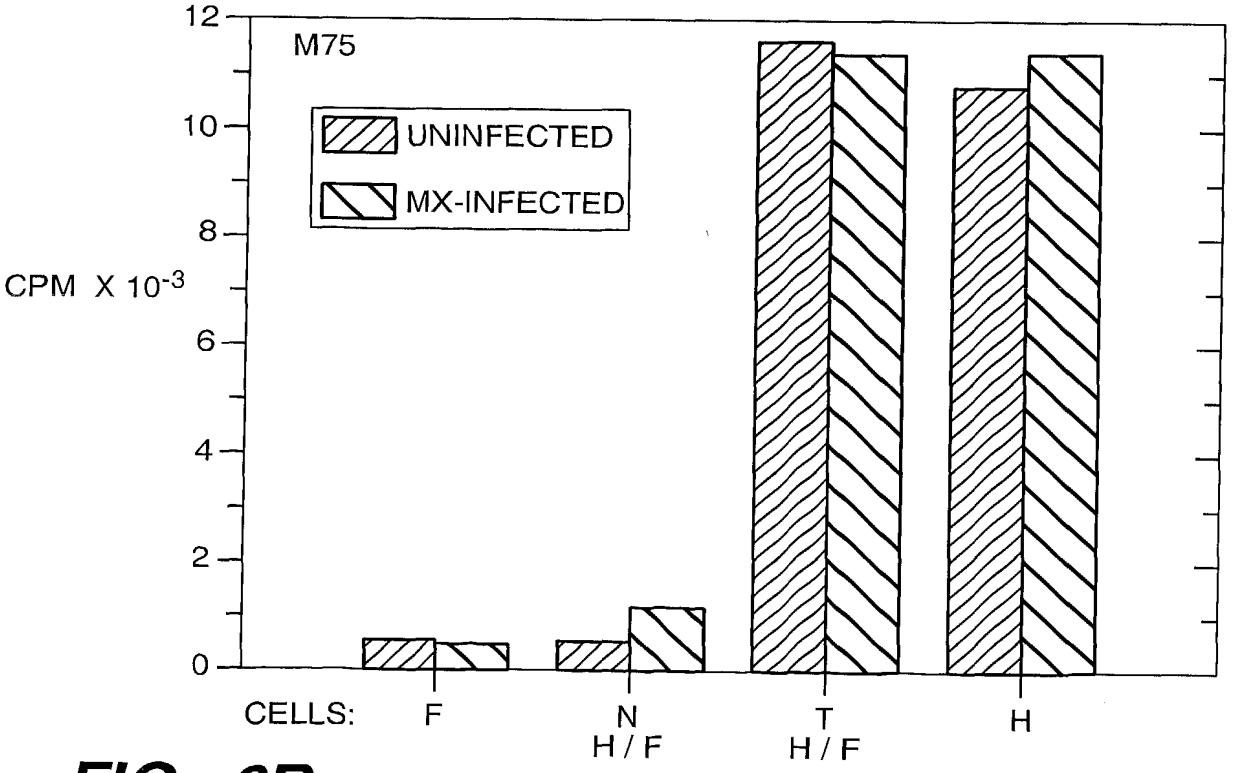

M75
UNINFECTED
MX-INFECTED
CPM X 10-3
12
10
8
6
4
2
0
CELLS:
F
N
H / F
T
H / F
H

FIG._6B

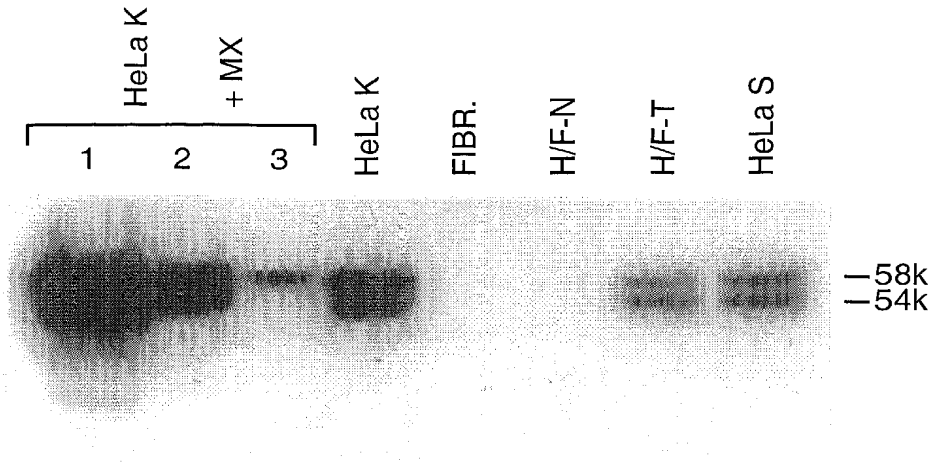

HeLa K
+ MX
1
2
3
HeLa K
FIBR.
H/F-N
H/F-T
HeLa S
58k
54k

FIG._7

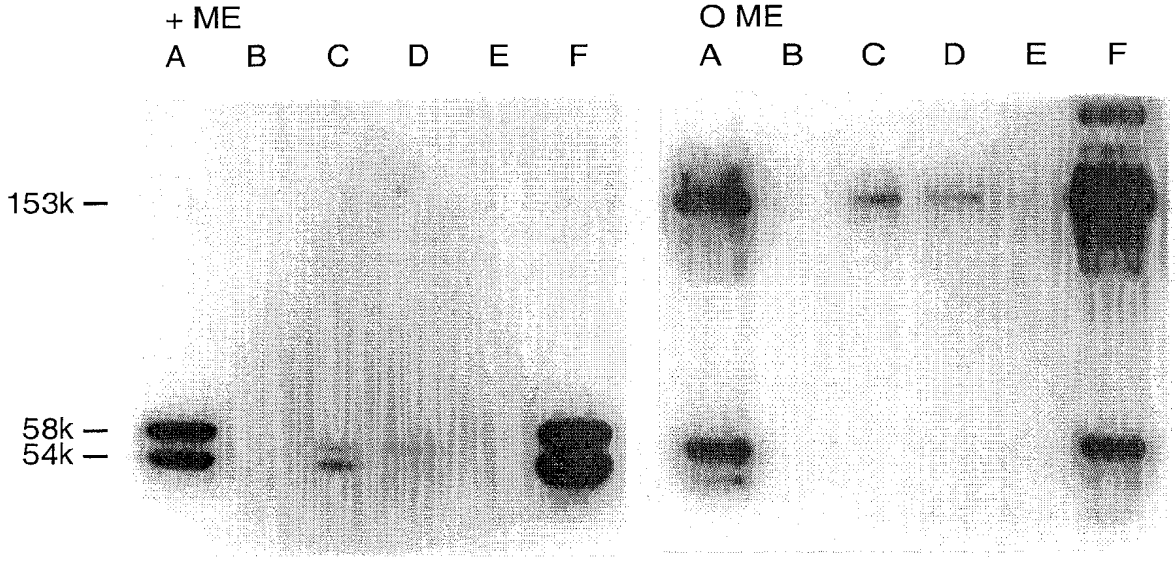

+ ME
A B C D E F
O ME
A B C D E F
153k
58k
54k

FIG._8

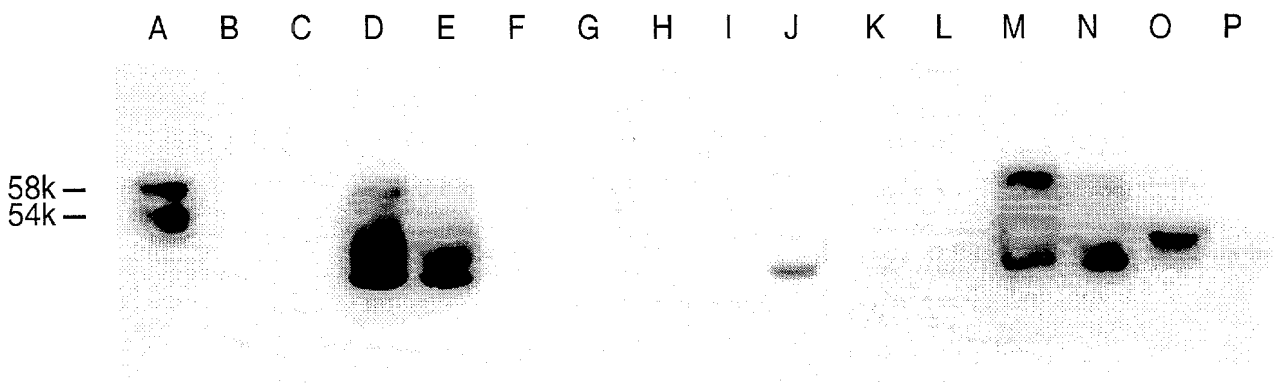


FIG._9

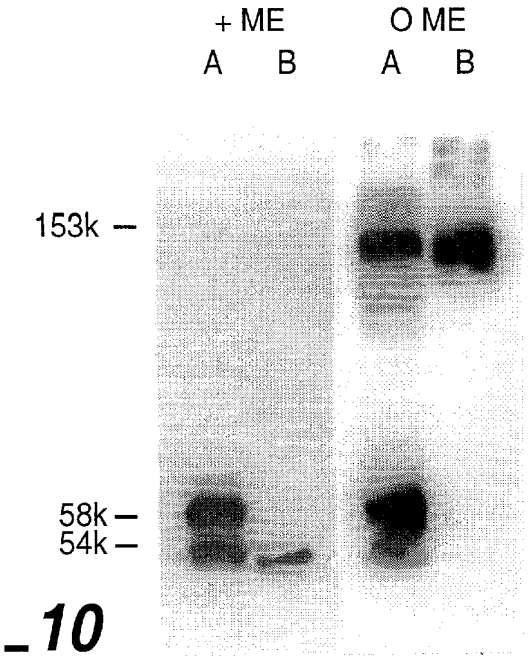


FIG._10

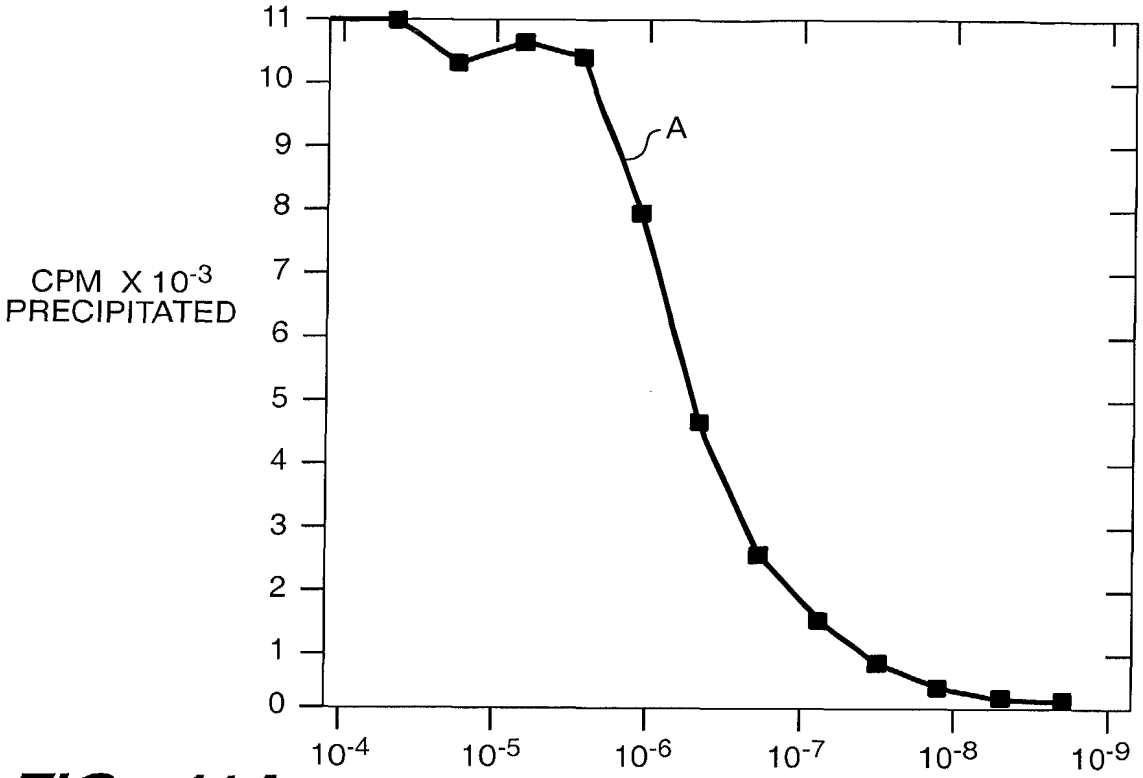


FIG._11A

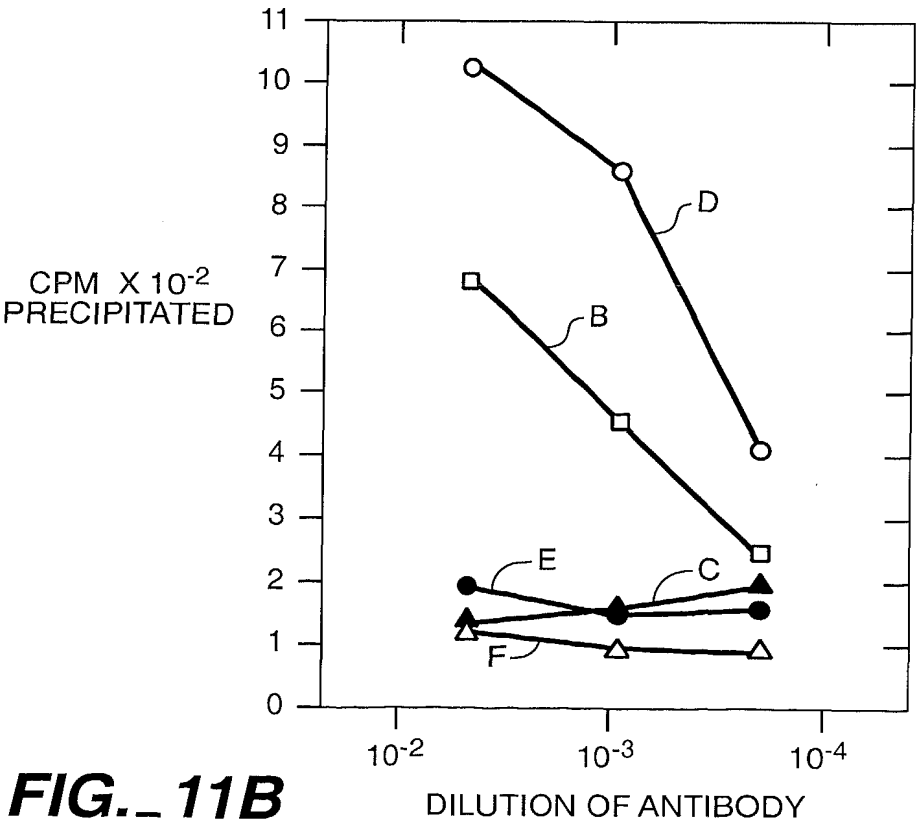


FIG._11B

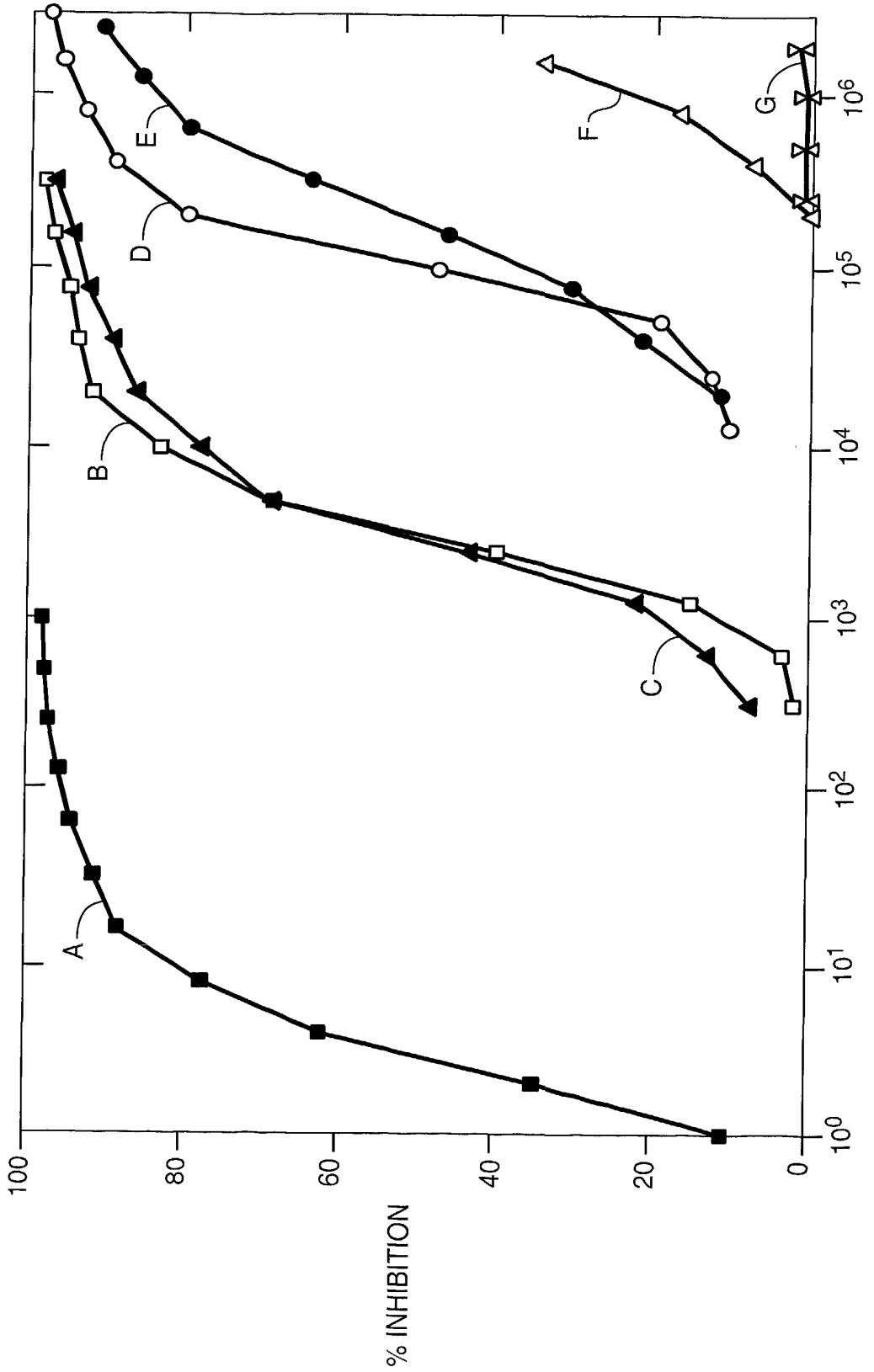

% INHIBITION
100
80
60
40
20
0
10^0
10^1
10^2
10^3
10^4
10^5
10^6
COMPETING PROTEIN (ng)
A
B
C
D
E
F
G

FIG._12

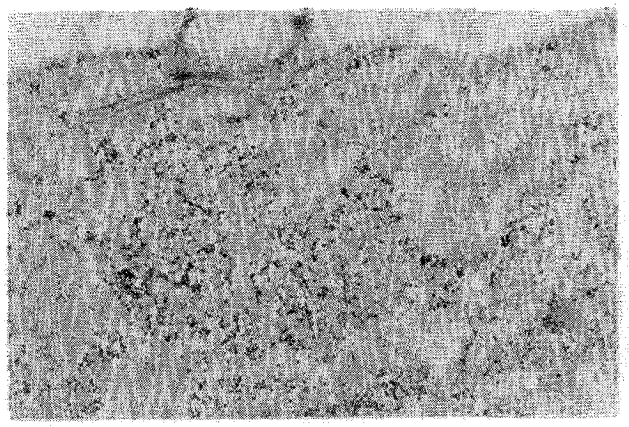


FIG._13A

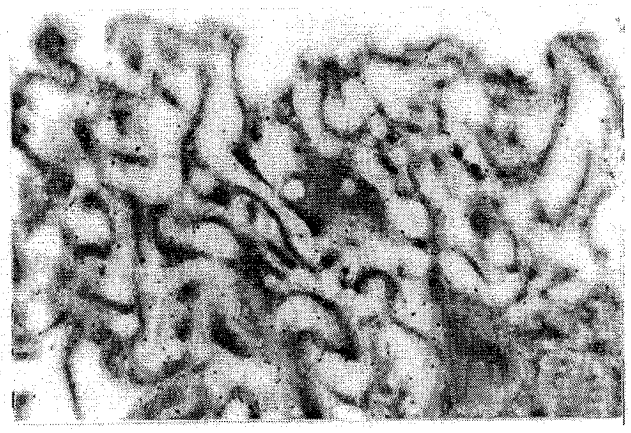


FIG._13B

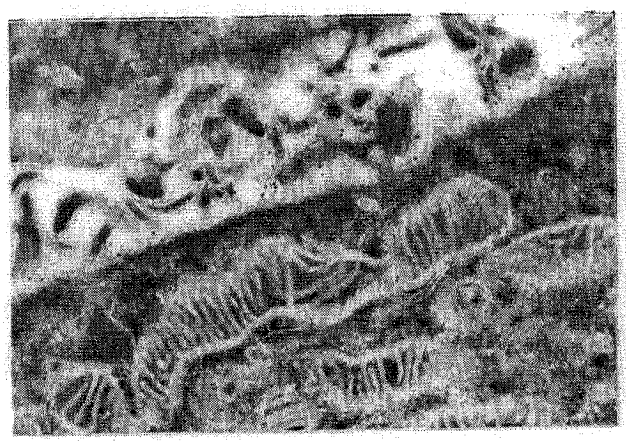


FIG._13C

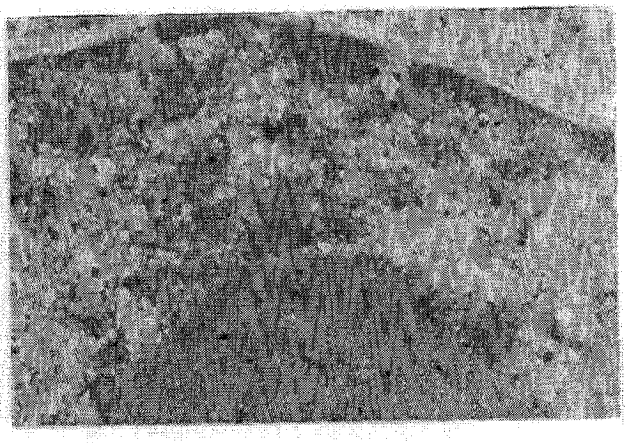


FIG._13D

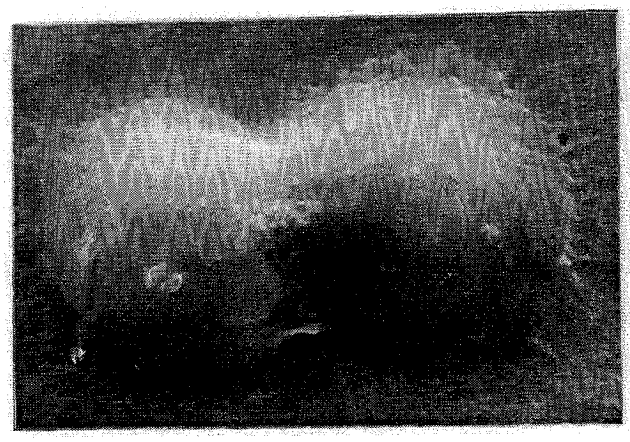


FIG._13E

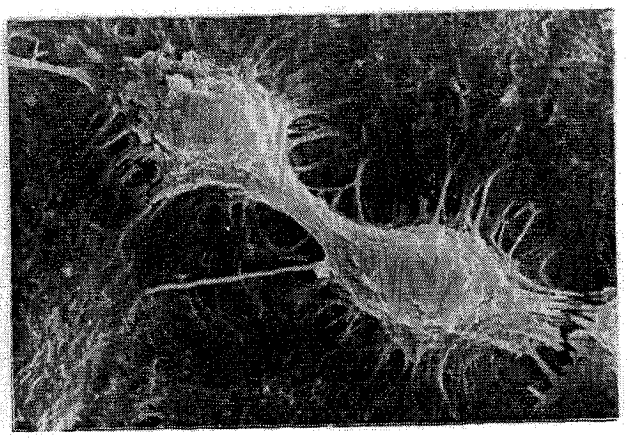


FIG._13F

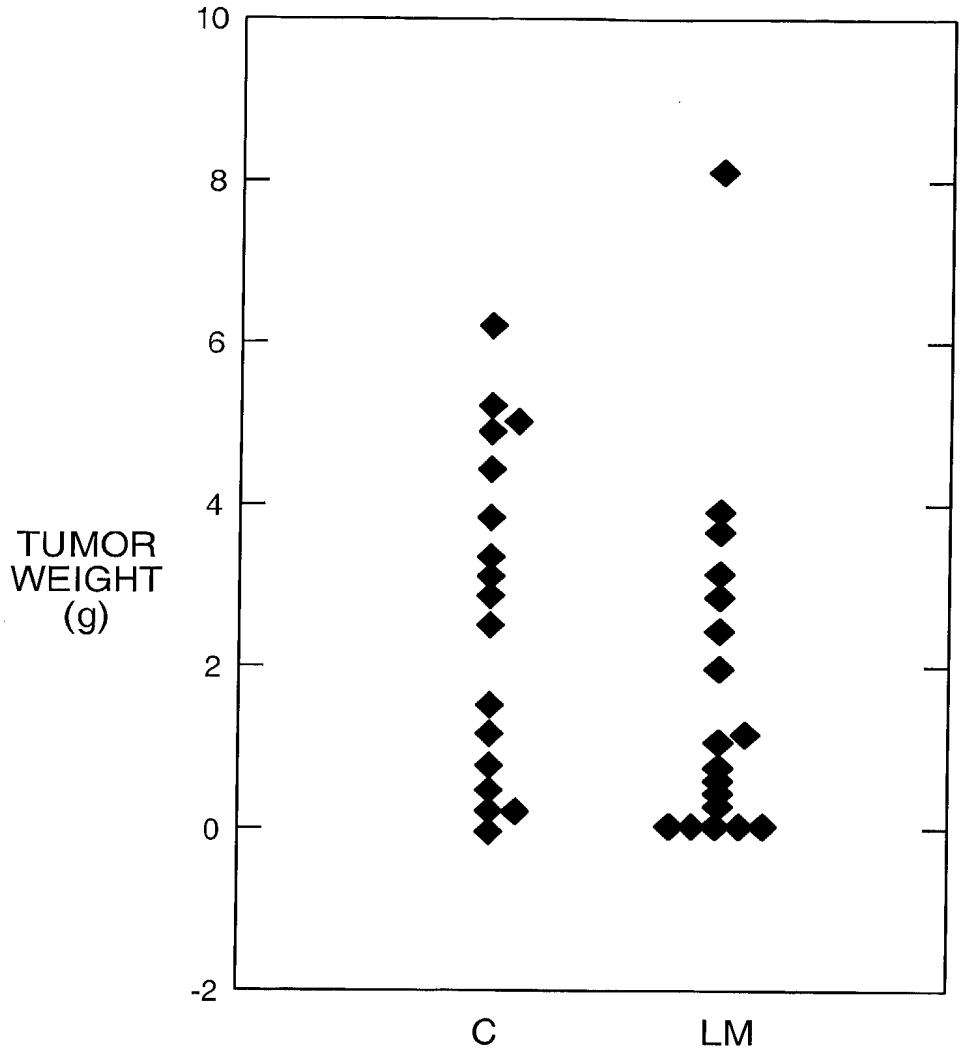


FIG._14

```
   1 ggatcctgtt gactcgtgac cttaccccca accctgtgct ctctgaaaca tgagctgtgt
  61 ccactcaggg ttaaatggat taagggcggt gcaagatgtg ctttgttaaa cagatgcttg
 121 aaggcagcat gctcgttaag agtcatcacc aatccctaat ctcaagtaat cagggacaca
 181 aacactgcgg aaggccgcag ggtcctctgc ctaggaaaac cagagacctt tgttcacttg
 241 tttatctgac cttccctcca ctattgtcca tgaccctgcc aaatcccccc ctgtgagaaa
 301 cacccaagaa ttatcaataa aaaaataaat ttaaaaaaaa aatacaaaaa aaaaaaaaaa
 361 aaaaaaaaaa gacttacgaa tagttattga taaatgaata gctattggta aagccaagta
 421 aatgatcata ttcaaaacca gacggccatc atcacagctc aagtctacct gatttgatct
 481 ctttatcatt gtcattcttt ggattcacta gattagtcat catcctcaaa attctccccc
 541 aagttctaat tacgttccaa acatttaggg gttacatgaa gcttgaacct actaccttct
 601 ttgcttttga gccatgagtt gtaggaatga tgagtttaca ccttacatgc tggggattaa
 661 tttaaacttt acctctaagt cagttgggta gcctttggct tatttttgta gctaattttg
 721 tagttaatgg atgcactgtg aatcttgcta tgatagtttt cctccacact ttgccactag
 781 gggtaggtag gtactcagtt ttcagtaatt gcttacctaa gaccctaagc cctatttctc
 841 ttgtactggc ctttatctgt aatatgggca tatttaatac aatataattt ttggagtttt
 901 tttgtttgtt tgtttgtttg tttttttgag acggagtctt gcatctgtca tgcccaggct
 961 ggagtagcag tggtgccatc tcggctcact gcaagctcca cctcccgagt tcacgccatt
1021 ttcctgcctc agcctcccga gtagctggga ctacaggcgc ccgccaccat gcccggctaa
1081 ttttttgtat ttttggtaga gacggggttt caccgtgtta gccagaatgg tctcgatctc
1141 ctgacttcgt gatccacccg cctcggcctc ccaaagttct gggattacag gtgtgagcca
1201 ccgcacctgg ccaatttttt gagtctttta aagtaaaaat atgtcttgta agctggtaac
1261 tatggtacat ttccttttat taatgtggtg ctgacggtca tataggttct tttgagtttg
1321 gcatgcatat gctacttttt gcagtccttt cattacattt ttctctcttc atttgaagag
1381 catgttatat cttttagctt cacttggctt aaaaggttct ctcattagcc taacacagtg
1441 tcattgttgg taccacttgg atcataagtg gaaaaacagt caagaaattg cacagtaata
1501 cttgtttgta agagggatga ttcaggtgaa tctgacacta agaaactccc ctacctgagg
1561 tctgagattc ctctgacatt gctgtatata ggcttttcct ttgacagcct gtgactgcgg
1621 actatttttc ttaagcaaga tatgctaaag ttttgtgagc ctttttccag agagaggtct
1681 catatctgca tcaagtgaga acatataatg tctgcatgtt tccatatttc aggaatgttt
1741 gcttgtgttt tatgctttta tatagacagg gaaacttgtt cctcagtgac ccaaaagagg
1801 tgggaattgt tattggatat catcattggc ccacgctttc tgaccttgga aacaattaag
1861 ggttcataat ctcaattctg tcagaattgg tacaagaaat agctgctatg tttcttgaca
1921 ttccacttgg taggaaataa gaatgtgaaa ctcttcagtt ggtgtgtgtc cct?gttttt
```

FIG._15A

```
1981 ttgcaatttc cttcttactg tgttaaaaaa aagtatgatc ttgctctgag aggtgaggca
2041 ttcttaatca tgatctttaa agatcaataa tataatcctt tcaaggatta tgtctttatt
2101 ataataaaga taatttgtct ttaacagaat caataatata atcccttaaa ggattatatc
2161 tttgctgggc gcagtggctc acacctgtaa tcccagcact ttgggtggcc aaggtggaag
2221 gatcaaattt gcctacttct atattatctt ctaaagcaga attcatctct cttccctcaa
2281 tatgatgata ttgacagggt ttgccctcac tcactagatt gtgagctcct gctcagggca
2341 ggtagcgttt tttgtttttg tttttgtttt tctttttttga gacagggtct tgctctgtca
2401 cccaggccag agtgcaatgg tacagtctca gctcactgca gcctcaaccg cctcggctca
2461 aaccatcatc ccatttcagc ctcctgagta gctgggacta caggcacatg ccattacacc
2521 tggctaattt ttttgtattt ctagtagaga cagggtttgg ccatgttgcc cgggctggtc
2581 tcgaactcct ggactcaagc aatccaccca cctcagcctc ccaaaatgag ggaccgtgtc
2641 ttattcattt ccatgtccct agtccatagc ccagtgctgg acctatggta gtactaaata
2701 aatatttgtt gaatgcaata gtaaatagca tttcagggag caagaactag attaacaaag
2761 gtggtaaaag gtttggagaa aaaaataata gtttaatttg gctagagtat gagggagagt
2821 agtaggagac aagatggaaa ggtctcttgg gcaaggtttt gaaggaagtt ggaagtcaga
2881 agtacacaat gtgcatatcg tggcaggcag tggggagcca atgaaggctt ttgagcagga
2941 gagtaatgtg ttgaaaaata aatataggtt aaacctatca gagcccctct gacacataca
3001 cttgcttttc attcaagctc aagtttgtct cccacatacc cattacttaa ctcaccctcg
3061 ggctccccta gcagcctgcc ctacctcttt acctgcttcc tggtggagtc agggatgtat
3121 acatgagctg ctttccctct cagccagagg acatgggggg ccccagctcc cctgcctttc
3181 cccttctgtg cctggagctg ggaagcaggc cagggttagc tgaggctggc tggcaagcag
3241 ctgggtggtg ccagggagag cctgcatagt gccaggtggt gccttgggtt ccaagctagt
3301 ccatggcccc gataaccttc tgcctgtgca cacacctgcc cctcactcca cccccatcct
3361 agctttggta tgggggagag ggcacagggc cagacaaacc tgtgagactt tggctccatc
3421 tctgcaaaag ggcgctctgt gagtcagcct gctcccctcc aggcttgctc ctcccccacc
3481 cagctctcgt ttccaatgca cgtacagccc gtacacaccg tgtgctggga caccccACAG
3541 TCAGCCGCAT GGCTCCCCTG TGCCCCAGCC CCTGGCTCCC TCTGTTGATC CCGGCCCCTG
3601 CTCCAGGCCT CACTGTGCAA CTGCTGCTGT CACTGCTGCT TCTGGTGCCT GTCCATCCCC
3661 AGAGGTTGCC CCGGATGCAG GAGGATTCCC CCTTGGGAGG AGGCTCTTCT GGGGAAGATG
3721 ACCCACTGGG CGAGGAGGAT CTGCCCAGTG AAGAGGATTC ACCCAGAGAG GAGGATCCAC
3781 CCGGAGAGGA GGATCTACCT GGAGAGGAGG ATCTACCTGG AGAGGAGGAT CTACCTGAAG
3841 TTAAGCCTAA ATCAGAAGAA GAGGGCTCCC TGAAGTTAGA GGATCTACCT ACTGTTGAGG
3901 CTCCTGGAGA TCCTCAAGAA CCCCAGAATA ATGCCCACAG GGACAAAGAA Ggtaagtggt
```

FIG._15B

```
3961 catcaatctc caaatccagg ttccaggagg ttcatgactc ccctcccata ccccagccta
4021 ggctctgttc actcagggaa ggaggggaga ctgtactccc cacagaagcc cttccagagg
4081 tcccatacca atatccccat ccccactctc ggaggtagaa agggacagat gtggagagaa
4141 aataaaaagg gtgcaaaagg agagaggtga gctggatgag atgggagaga agggggaggc
4201 tggagaagag aaagggatga gaactgcaga tgagagaaaa aatgtgcaga cagaggaaaa
4261 aaataggtgg agaaggagag tcagagagtt tgaggggaag agaaaaggaa agcttgggag
4321 gtgaagtggg taccagagac aagcaagaag agctggtaga agtcatctca tcttaggcta
4381 caatgaggaa ttgagaccta ggaagaaggg acacagcagg tagagaaacg tggcttcttg
4441 actcccaagc caggaatttg gggaaagggg ttggagacca tacaaggcag agggatgagt
4501 ggggagaaga aagaagggag aaaggaaaga tggtgtactc actcatttgg gactcaggac
4561 tgaagtgccc actcactttt ttttttttt tttttgagac aaactttcac ttttgttgcc
4621 caggctggag tgcaatggcg cgatctcggc tcactgcaac ctccacctcc cgggttcaag
4681 tgattctcct gcctcagcct ctagccaagt agctgcgatt acaggcatgc gccaccacgc
4741 ccggctaatt tttgtatttt tagtagagac ggggtttcgc catgttggtc aggctggtct
4801 cgaactcctg atctcaggtg atccaaccac cctggcctcc caaagtgctg ggattatagg
4861 cgtgagccac agcgcctggc ctgaagcagc cactcacttt tacagaccct aagacaatga
4921 ttgcaagctg gtaggattgc tgtttggccc acccagctgc ggtgttgagt ttgggtgcgg
4981 tctcctgtgc tttgcacctg gcccgcttaa ggcatttgtt acccgtaatg ctcctgtaag
5041 gcatctgcgt ttgtgacatc gttttggtcg ccaggaaggg attggggctc taagcttgag
5101 cggttcatcc ttttcattta tacagGGGAT GACCAGAGTC ATTGGCGCTA TGGAGgtgag
5161 acacccaccc gctgcacaga cccaatctgg gaacccagct ctgtggatct cccctacagc
5221 cgtccctgaa cactggtccc gggcgtccca cccgccgccc accgtcccac cccctcacct
5281 tttctacccg ggttccctaa gttcctgacc taggcgtcag acttcctcac tatactctcc
5341 caccccagGC GACCCGCCCT GGCCCCGGGT GTCCCCAGCC TGCGCGGGCC GCTTCCAGTC
5401 CCCGGTGGAT ATCCGCCCCC AGCTCGCCGC CTTCTGCCCG GCCCTGCGCC CCCTGGAACT
5461 CCTGGGCTTC CAGCTCCCGC CGCTCCCAGA ACTGCGCCTG CGCAACAATG GCCACAGTGg
5521 tgaggggtc tccccgccga gacttgggga tggggcgggg cgcagggaag ggaaccgtcg
5581 cgcagtgcct gcccgggggt tgggctggcc ctaccgggcg gggccggctc acttgcctct
5641 ccctacgcag TGCAACTGAC CCTGCCTCCT GGGCTAGAGA TGGCTCTGGG TCCCGGGCGG
5701 GAGTACCGGG CTCTGCAGCT GCATCTGCAC TGGGGGGCTG CAGGTCGTCC GGGCTCGGAG
5761 CACACTGTGG AAGGCCACCG TTTCCCTGCC GAGgtgagcg cggactggcc gagaaggggc
5821 aaaggagcgg ggcggacggg ggccagagac gtggccctct cctaccctcg tgtcctttc
5881 agATCCACGT GGTTCACCTC AGCACCGCCT TTGCCAGAGT TGACGAGGCC TTGGGGCGCC
```

FIG._15C

```
5941 CGGGAGGCCT GGCCGTGTTG GCCGCCTTTC TGGAGgtacc agatcctgga caccccctac
6001 tccccgcttt cccatcccat gctcctcccg gactctatcg tggagccaga gaccccatcc
6061 cagcaagctc actcaggccc ctggctgaca aactcattca cgcactgttt gttcatttaa
6121 cacccactgt gaaccaggca ccagccccca acaaggattc tgaagctgta ggtccttgcc
6181 tctaaggagc ccacagccag tgggggaggc tgacatgaca gacacatagg aaggacatag
6241 taaagatggt ggtcacagag gaggtgacac ttaaagcctt cactggtaga aaagaaaagg
6301 aggtgttcat tgcagaggaa acagaatgtg caaagactca gaatatggcc tatttaggga
6361 atggctacat acaccatgat tagaggaggc ccagtaaagg gaagggatgg tgagatgcct
6421 gctaggttca ctcactcact tttatttatt tatttatttt tttgacagtc tctctgtcgc
6481 ccaggctgga gtgcagtggt gtgatcttgg gtcactgcaa cttccgcctc ccgggttcaa
6541 gggattctcc tgcctcagct tcctgagtag ctggggttac aggtgtgtgc caccatgccc
6601 agctaatttt tttttgtatt tttagtagac agggtttcac catgttggtc aggctggtct
6661 caaactcctg gcctcaagtg atccgcctga ctcagcctac caaagtgctg attacaagtg
6721 tgagccaccg tgcccagcca cactcactga ttctttaatg ccagccacac agcacaaagt
6781 tcagagaaat gcctccatca tagcatgtca atatgttcat actcttaggt tcatgatgtt
6841 cttaacatta ggttcataag caaaataaga aaaaagaata ataaataaaa gaagtggcat
6901 gtcaggacct cacctgaaaa gccaaacaca gaatcatgaa ggtgaatgca gaggtgacac
6961 caacacaaag gtgtatatat ggtttcctgt ggggagtatg tacggaggca gcagtgagtg
7021 agactgcaaa cgtcagaagg gcacgggtca ctgagagcct agtatcctag taaagtgggc
7081 tctctccctc tctctccagc ttgtcattga aaaccagtcc accaagcttg ttggttcgca
7141 cagcaagagt acatagagtt tgaaataata cataggattt taagagggag acactgtctc
7201 taaaaaaaaa aacaacagca acaacaaaaa gcaacaacca ttacaatttt atgttccctc
7261 agcattctca gagctgagga atgggagagg actatgggaa ccccccttcat gttccggcct
7321 tcagccatgg ccctggatac atgcactcat ctgtcttaca atgtcattcc cccagGAGGG
7381 CCCGGAAGAA AACAGTGCCT ATGAGCAGTT GCTGTCTCGC TTGGAAGAAA TCGCTGAGGA
7441 AGgtcagttt gttggtctgg ccactaatct ctgtggccta gttcataaag aatcaccctt
7501 tggagcttca ggtctgaggc tggagatggg ctccctccag tgcaggaggg attgaagcat
7561 gagccagcgc tcatcttgat aataaccatg aagctgacag acacagttac ccgcaaacgg
7621 ctgcctacag attgaaaacc aagcaaaaac cgccgggcac ggtggctcac gcctgtaatc
7681 ccagcacttt gggaggccaa ggcaggtgga tcacgaggtc aagagatcaa gaccatcctg
7741 gccaacatgg tgaaacccca tctctactaa aaatacgaaa aaatagccag gcgtggtggc
7801 gggtgcctgt aatcccagct actcgggagg ctgaggcagg agaatggcat gaacccggga
7861 ggcagaagtt gcagtgagcc gagatcgtgc cactgcactc cagcctgggc aacagagcga
```

FIG._15D

```
7921 gactcttgtc tcaaaaaaaa aaaaaaaaaa gaaaaccaag caaaaaccaa aatgagacaa
7981 aaaaaacaag accaaaaaat ggtgtttgga aattgtcaag gtcaagtctg gagagctaaa
8041 ctttttctga gaactgttta tctttaataa gcatcaaata ttttaacttt gtaaatactt
8101 ttgttggaaa tcgttctctt cttagtcact cttgggtcat tttaaatctc acttactcta
8161 ctagaccttt taggtttctg ctagactagg tagaactctg cctttgcatt tcttgtgtct
8221 gttttgtata gttatcaata ttcatattta tttacaagtt attcagatca ttttttcttt
8281 tctttttttt ttttttttt ttttttacat ctttagtaga gacagggttt caccatattg
8341 gccaggctgc tctcaaactc ctgaccttgt gatccaccag cctcggcctc ccaaagtgct
8401 gggattcatt ttttcttttt aatttgctct gggcttaaac ttgtggccca gcactttatg
8461 atggtacaca gagttaagag tgtagactca gacggtcttt cttctttcct tctcttcctt
8521 cctcccttcc ctcccacctt cccttctctc cttcctttct ttcttcctct cttgcttcct
8581 caggcctctt ccagttgctc caaagccctg tacttttttt tgagttaacg tcttatggga
8641 agggcctgca cttagtgaag aagtggtctc agagttgagt taccttggct tctgggaggt
8701 gaaactgtat ccctataccc tgaagcttta agggggtgca atgtagatga gaccccaaca
8761 tagatcctct tcacagGCTC AGAGACTCAG GTCCCAGGAC TGGACATATC TGCACTCCTG
8821 CCCTCTGACT TCAGCCGCTA CTTCCAATAT GAGGGGTCTC TGACTACACC GCCCTGTGCC
8881 CAGGGTGTCA TCTGGACTGT GTTTAACCAG ACAGTGATGC TGAGTGCTAA GCAGgtgggc
8941 ctggggtgtg tgtggacaca gtgggtgcgg gggaaagagg atgtaagatg agatgagaaa
9001 caggagaaga aagaaatcaa ggctgggctc tgtggcttac gcctataatc ccaccacgtt
9061 gggaggctga ggtgggagaa tggtttgagc ccaggagttc aagacaaggc ggggcaacat
9121 agtgtgaccc catctctacc aaaaaaaccc caacaaaacc aaaaatagcc gggcatggtg
9181 gtatgcggcc tagtcccagc tactcaagga ggctgaggtg ggaagatcgc ttgattccag
9241 gagtttgaga ctgcagtgag ctatgatccc accactgcct accatcttta ggatacattt
9301 atttatttat aaaagaaatc aagaggctgg atggggaata caggagctgg agggtggagc
9361 cctgaggtgc tggttgtgag ctggcctggg acccttgttt cctgtcatgc catgaaccca
9421 cccacactgt ccactgacct ccctagCTCC ACACCCTCTC TGACACCCTG TGGGGACCTG
9481 GTGACTCTCG GCTACAGCTG AACTTCCGAG CGACGCAGCC TTTGAATGGG CGAGTGATTG
9541 AGGCCTCCTT CCCTGCTGGA GTGGACAGCA GTCCTCGGGC TGCTGAGCCA Ggtacagctt
9601 tgtctggttt ccccccagcc agtagtccct tatcctccca tgtgtgtgcc agtgtctgtc
9661 attggtggtc acagcccgcc tctcacatct ccttttttctc tccagTCCAG CTGAATTCCT
9721 GCCTGGCTGC TGgtgagtct gcccctcctc ttggtcctga tgccaggaga ctcctcagca
9781 ccattcagcc ccagggctgc tcaggaccgc ctctgctccc tctccttttc tgcagaacag
9841 accccaaccc caatattaga gaggcagatc atggtgggga ttcccccatt gtccccagag
```

FIG._15E

```
 9901 gctaattgat tagaatgaag cttgagaaat ctcccagcat ccctctcgca aaagaatccc
 9961 ccccccttttt tttaaagata gggtctcact ctgtttgccc caggctgggg tgttgtggca
10021 cgatcatagc tcactgcagc ctcgaactcc taggctcagg caatcctttc accttagctt
10081 ctcaaagcac tgggactgta ggcatgagcc actgtgcctg gccccaaacg gccctttac
10141 ttggctttta ggaagcaaaa acggtgctta tcttacccct tctcgtgtat ccaccctcat
10201 cccttggctg gcctcttctg gagactgagg cactatgggg ctgcctgaga actcggggca
10261 ggggtggtgg agtgcactga ggcaggtgtt gaggaactct gcagacccct cttccttccc
10321 aaagcagccc tctctgctct ccatcgcagG TGACATCCTA GCCCTGGTTT TTGGCCTCCT
10381 TTTTGCTGTC ACCAGCGTCG CGTTCCTTGT GCAGATGAGA AGGCAGCACA Ggtattacac
10441 tgacccttтc ttcaggcaca agcttccccc acccttgtgg agtcacttca tgcaaagcgc
10501 atgcaaatga gctgctcctg ggccagtttt ctgattagcc tttcctgttg tgtacacaca
10561 gAAGGGGAAC CAAAGGGGGT GTGAGCTACC GCCCAGCAGA GGTAGCCGAG ACTGGAGCCT
10621 AGAGGCTGGA TCTTGGAGAA TGTGAGAAGC CAGCCAGAGG CATCTGAGGG GGAGCCGGTA
10681 ACTGTCCTGT CCTGCTCATT ATGCCACTTC CTTTTAACTG CCAAGAAATT TTTTAAAATA
10741 AATATTTATA ATaaaatatg tgttagtcac ctttgttccc caaatcagaa ggaggtattt
10801 gaatttccta ttactgttat tagcaccaat ttagtggtaa tgcatttatt ctattacagt
10861 tcggcctcct tccacacatc actccaatgt gttgctcc
```

FIG._15F

FIG._15

FIG._15A
FIG._15B
FIG._15C
FIG._15D
FIG._15E
FIG._15F

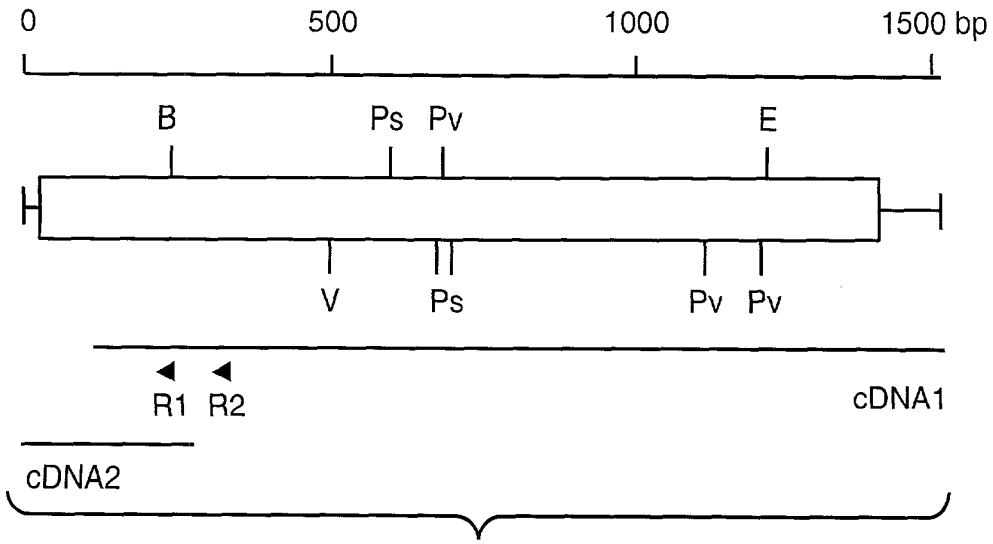

0
500
1000
1500 bp
B
Ps
Pv
E
V
Ps
Pv
Pv
R1
R2
cDNA1
cDNA2

FIG._16


5' LTR
Alu
Alu
PROMOTER REGION
CODING REGION
-3546-
-2666
-2326
-1310
-906
1

FIG._20

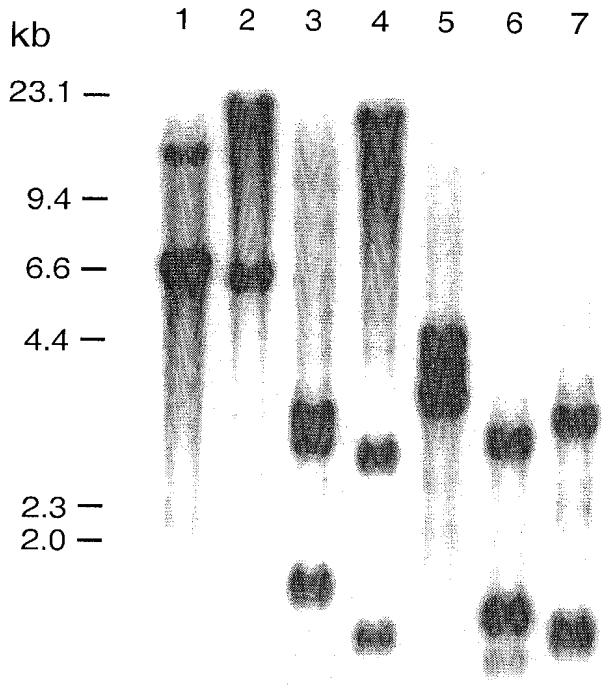


FIG._17

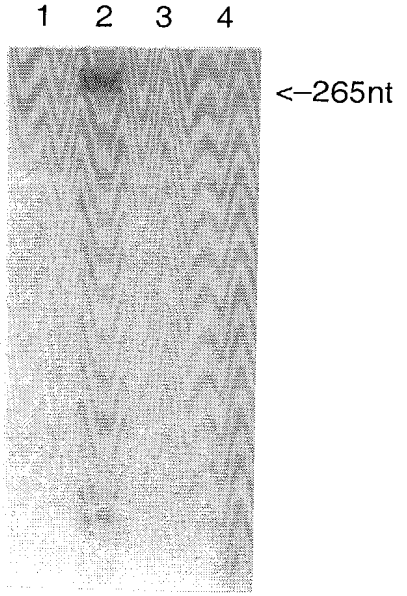


FIG._18A

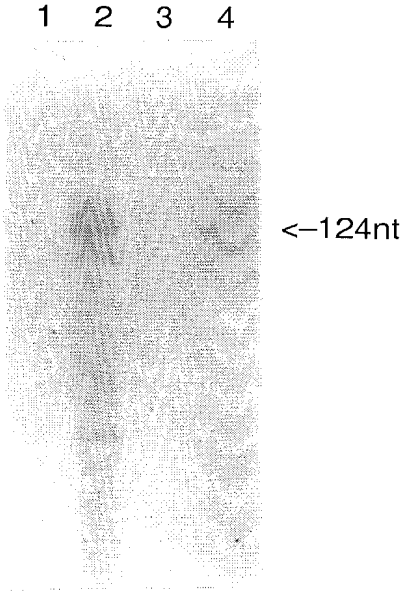


FIG._18B

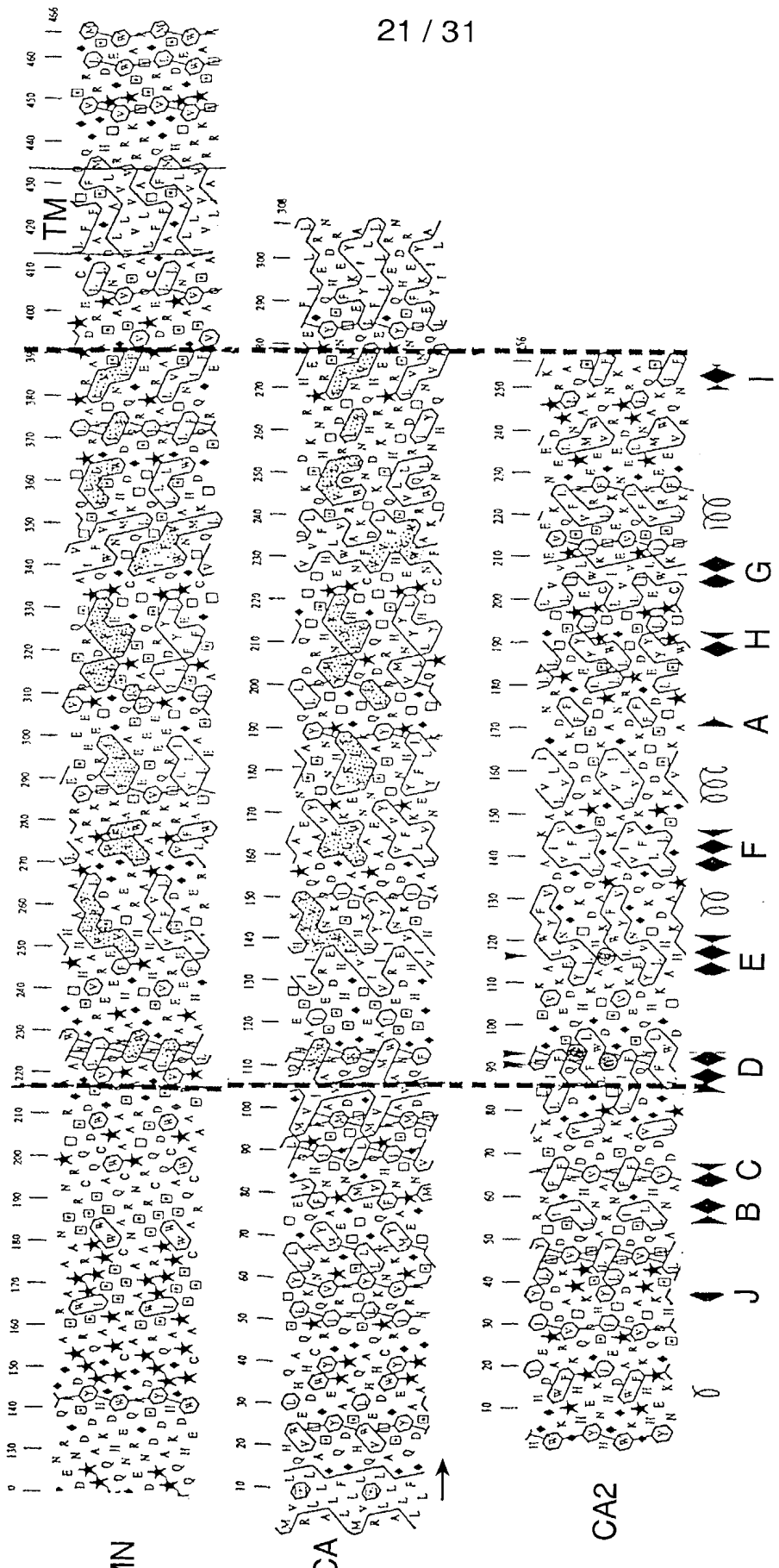


FIG._19A

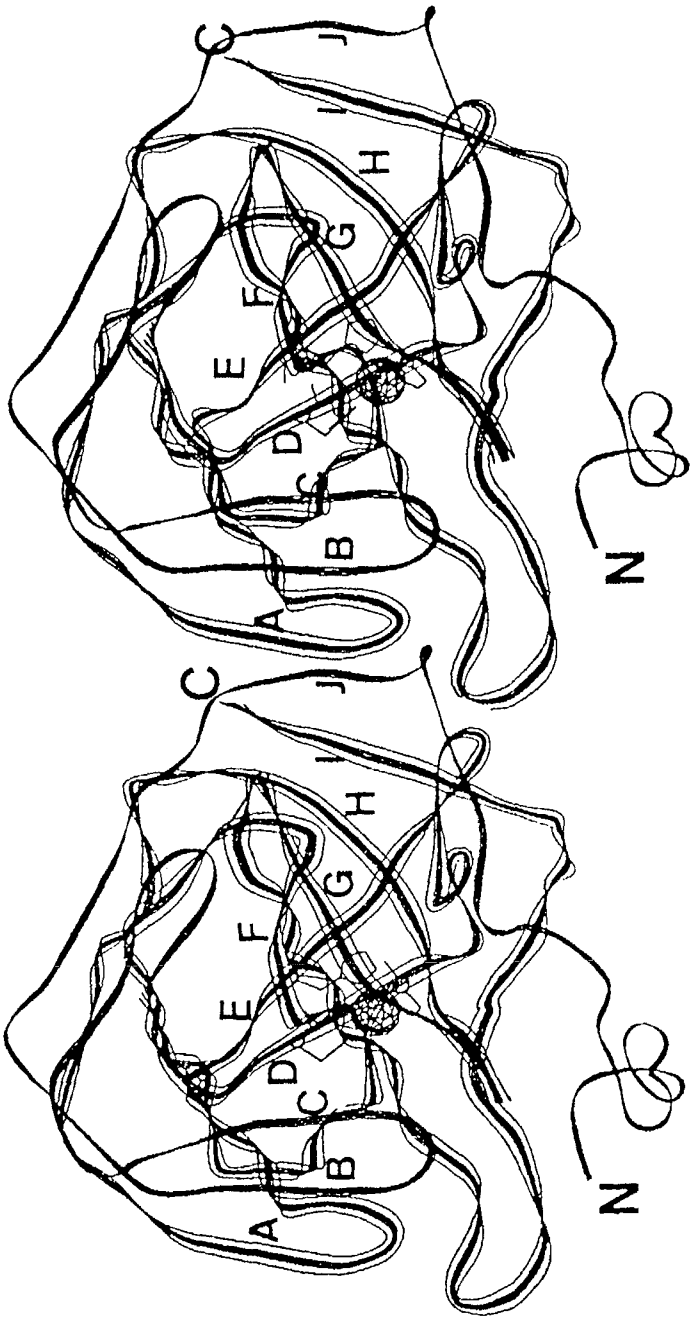


FIG._19B

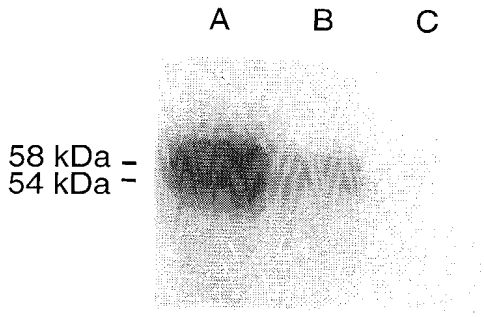


FIG._21A

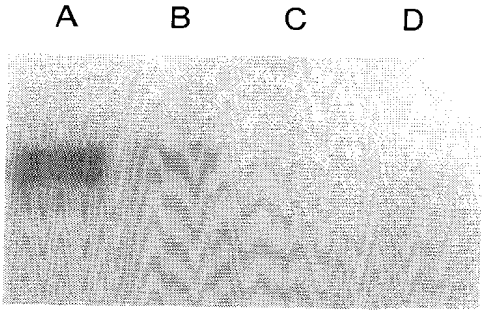


FIG._21B

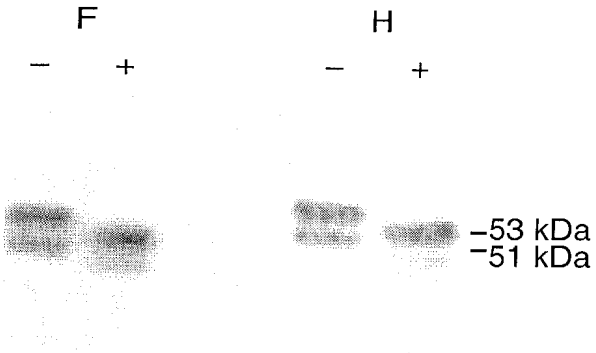


FIG._21C

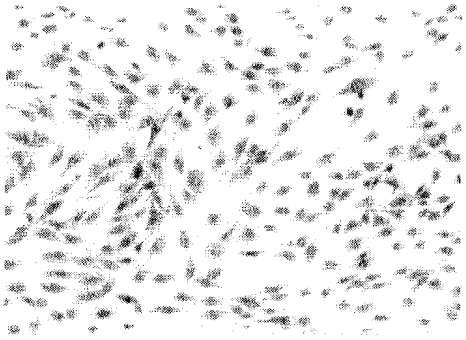


FIG._22A

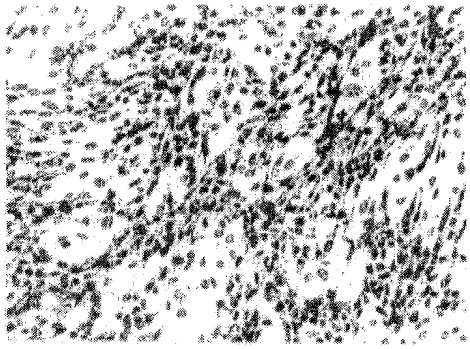


FIG._22B

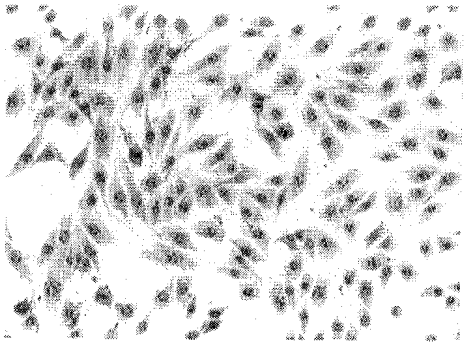


FIG._22C

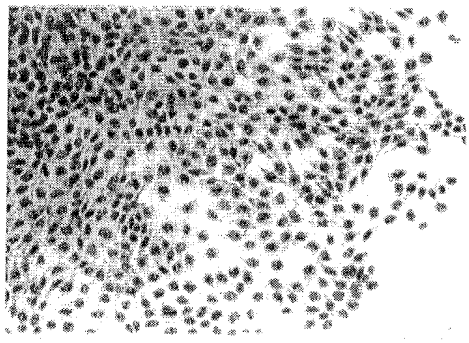


FIG._22D

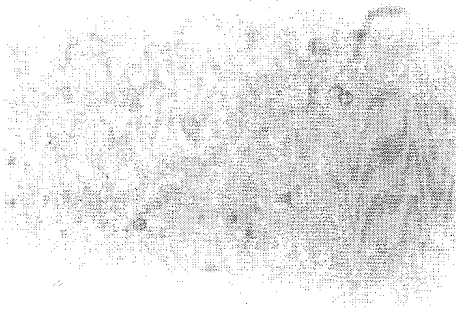


FIG._22E

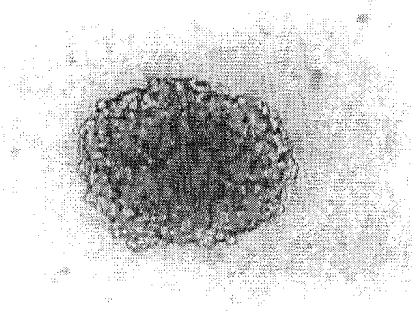


FIG._22F

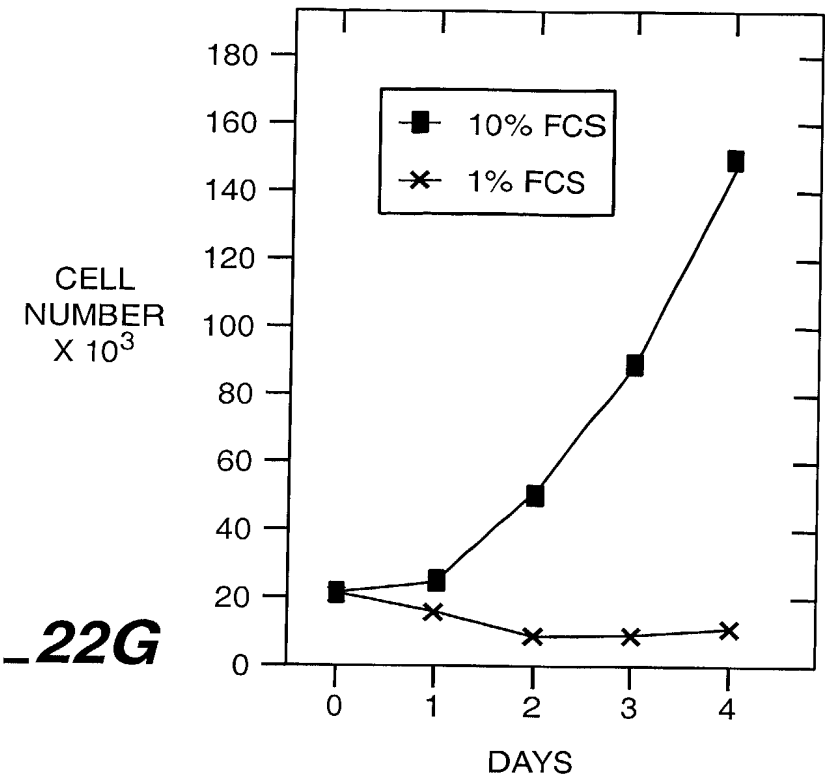


FIG._22G

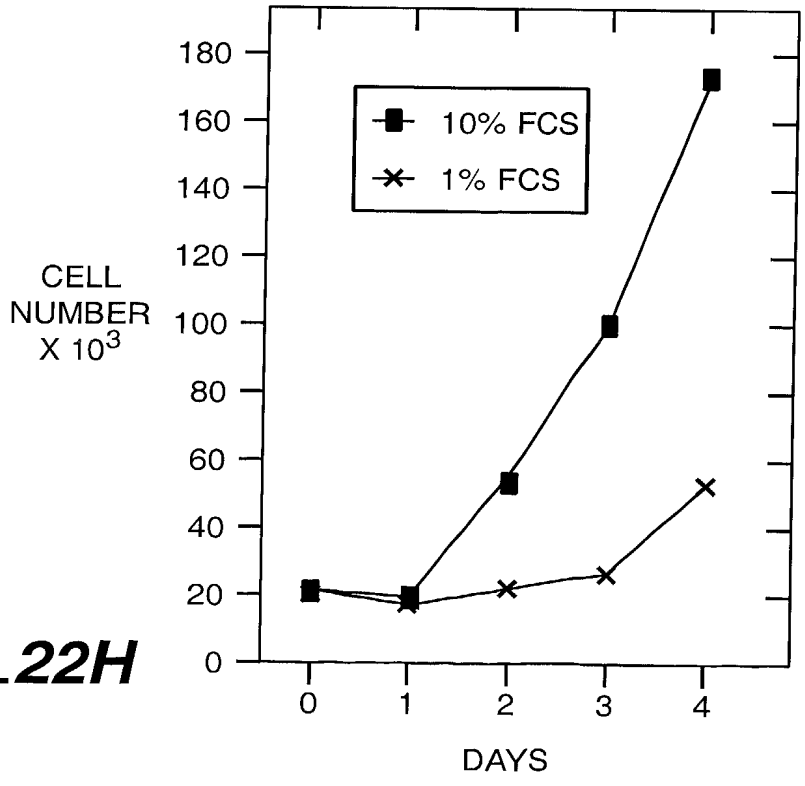


FIG._22H

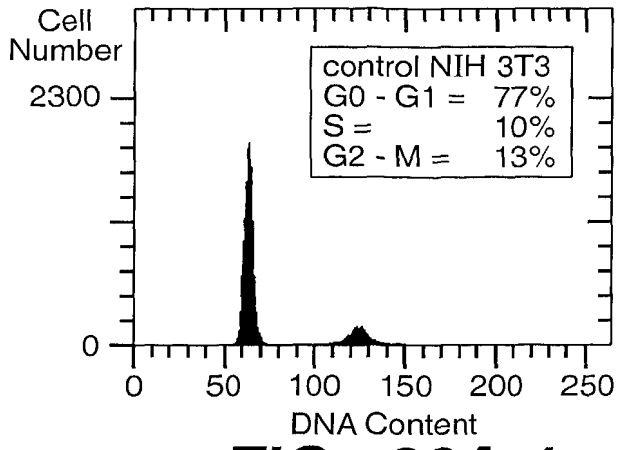


FIG._23A-1

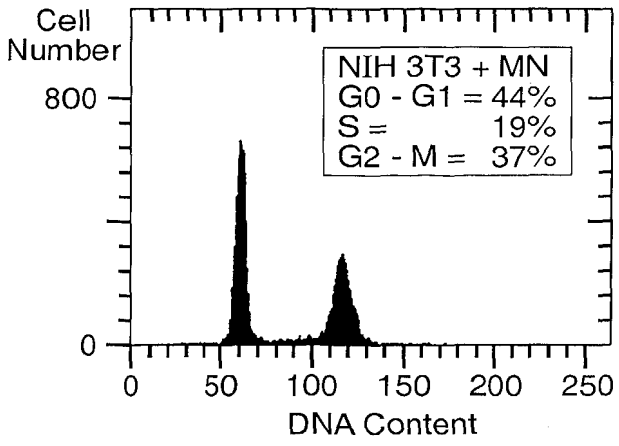


FIG._23A-2

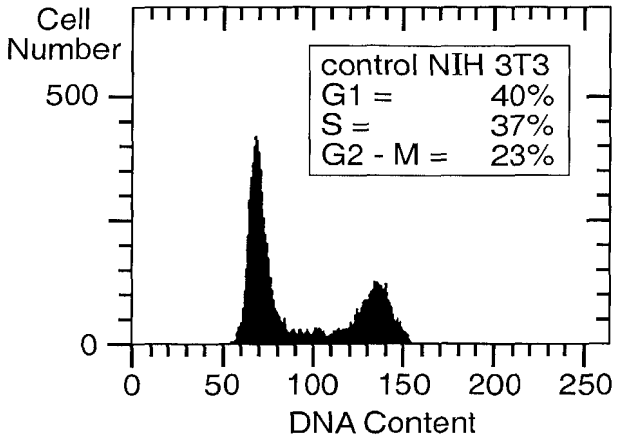


FIG._23B-1

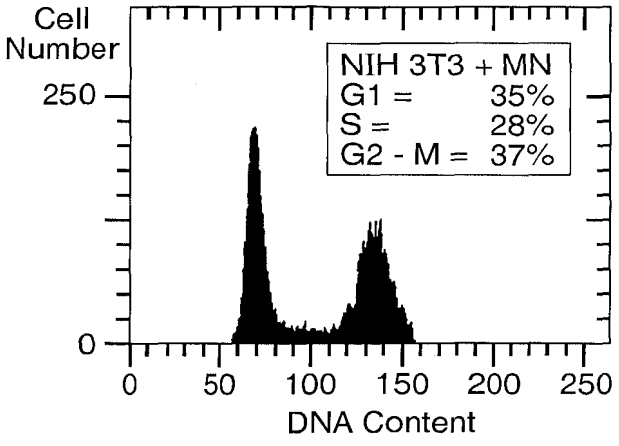
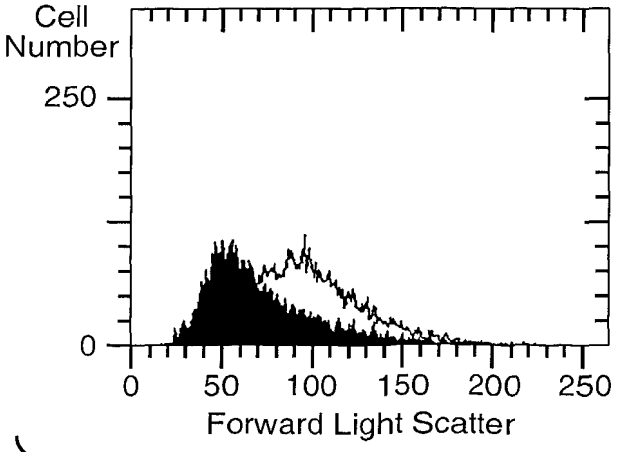


FIG._23B-2



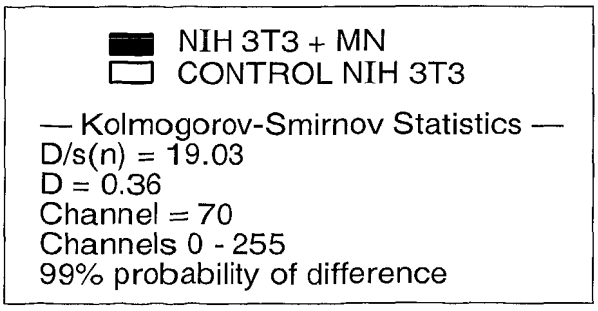


FIG._23C

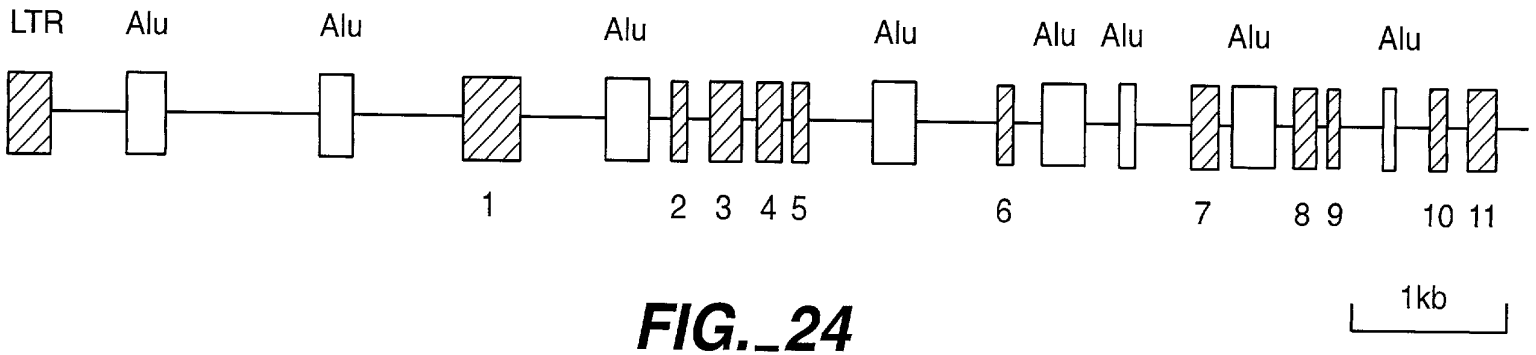

LTR
Alu
Alu
Alu
Alu
Alu
Alu
Alu
Alu
1
2 3 4 5
6
7
8 9
10 11
1kb

FIG._24

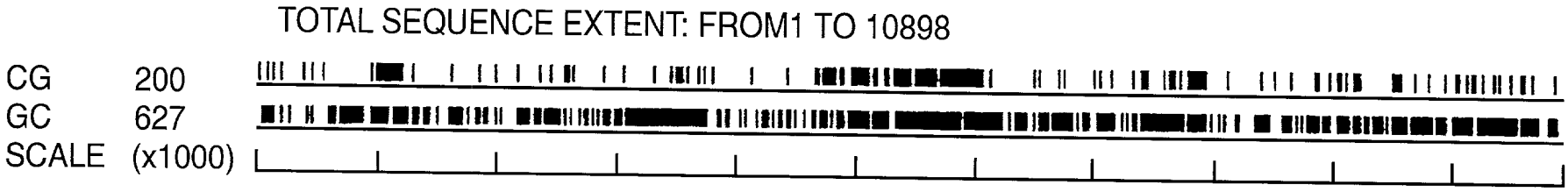
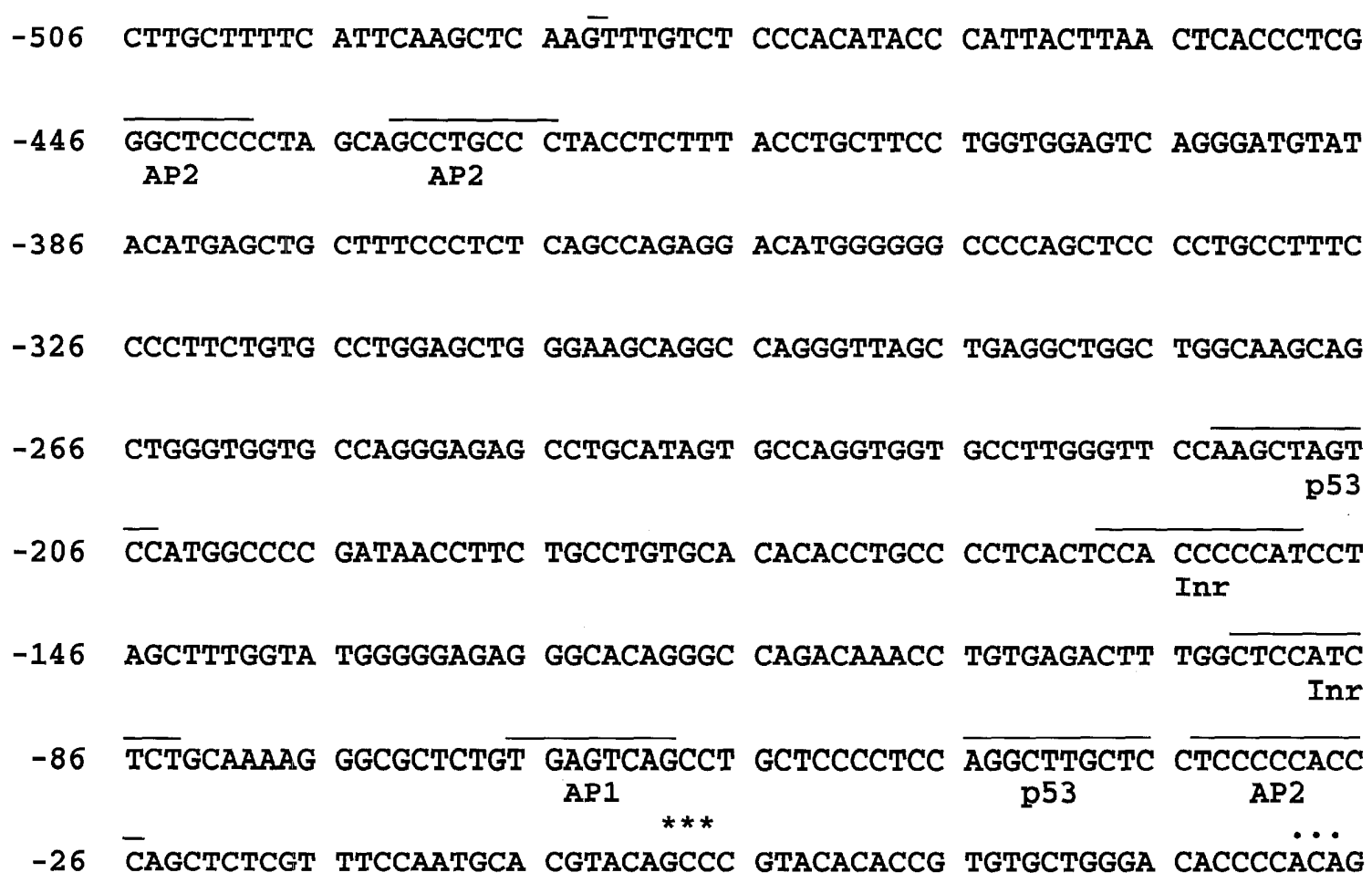

TOTAL SEQUENCE EXTENT: FROM1 TO 10898
CG 200
GC 627
SCALE (x1000)

FIG._26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-446 GGCTCCCCTA GCAGCCTGCC CTACCTCTTT ACCTGCTTCC TGGTGGAGTC AGGGATGTAT
AP2 AP2
-386 ACATGAGCTG CTTTCCCTCT CAGCCAGAGG ACATGGGGGG CCCCAGCTCC CCTGCCTTTC
-326 CCCTTCTGTG CCTGGAGCTG GGAAGCAGGC CAGGGTTAGC TGAGGCTGGC TGGCAAGCAG
-266 CTGGGTGGTG CCAGGGAGAG CCTGCATAGT GCCAGGTGGT GCCTTGGGTT CCAAGCTAGT
p53
-206 CCATGGCCCC GATAACCTTC TGCCTGTGCA CACACCTGCC CCTCACTCCA CCCCCATCCT
Inr
-146 AGCTTTGGTA TGGGGGAGAG GGCACAGGGC CAGACAAACC TGTGAGACTT TGGCTCCATC
Inr
-86 TCTGCAAAAG GGCGCTCTGT GAGTCAGCCT GCTCCCCTCC AGGCTTGCTC CTCCCCCACC
AP1 p53 AP2
***
-26 CAGCTCTCGT TTCCAATGCA CGTACAGCCC GTACACACCG TGTGCTGGGA CACCCCACAG

FIG._25

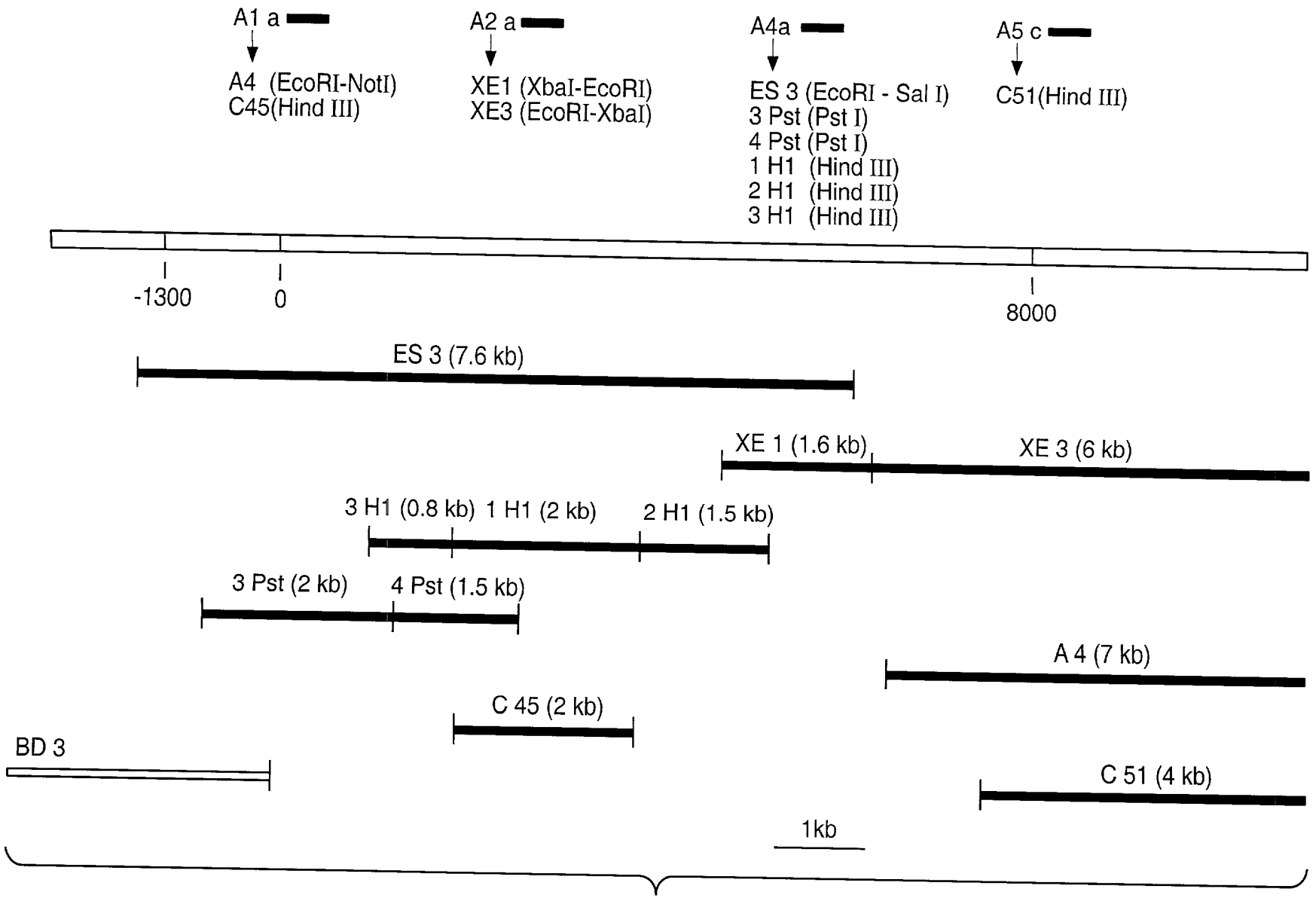
A1 a
A4 (EcoRI-NotI)
C45(Hind III)
A2 a
XE1 (XbaI-EcoRI)
XE3 (EcoRI-XbaI)
A4a
ES 3 (EcoRI - Sal I)
3 Pst (Pst I)
4 Pst (Pst I)
1 H1 (Hind III)
2 H1 (Hind III)
3 H1 (Hind III)
A5 c
C51(Hind III)
-1300
0
8000
ES 3 (7.6 kb)
XE 1 (1.6 kb)
XE 3 (6 kb)
3 H1 (0.8 kb)
1 H1 (2 kb)
2 H1 (1.5 kb)
3 Pst (2 kb)
4 Pst (1.5 kb)
A 4 (7 kb)
C 45 (2 kb)
BD 3
C 51 (4 kb)
1kb

FIG._27

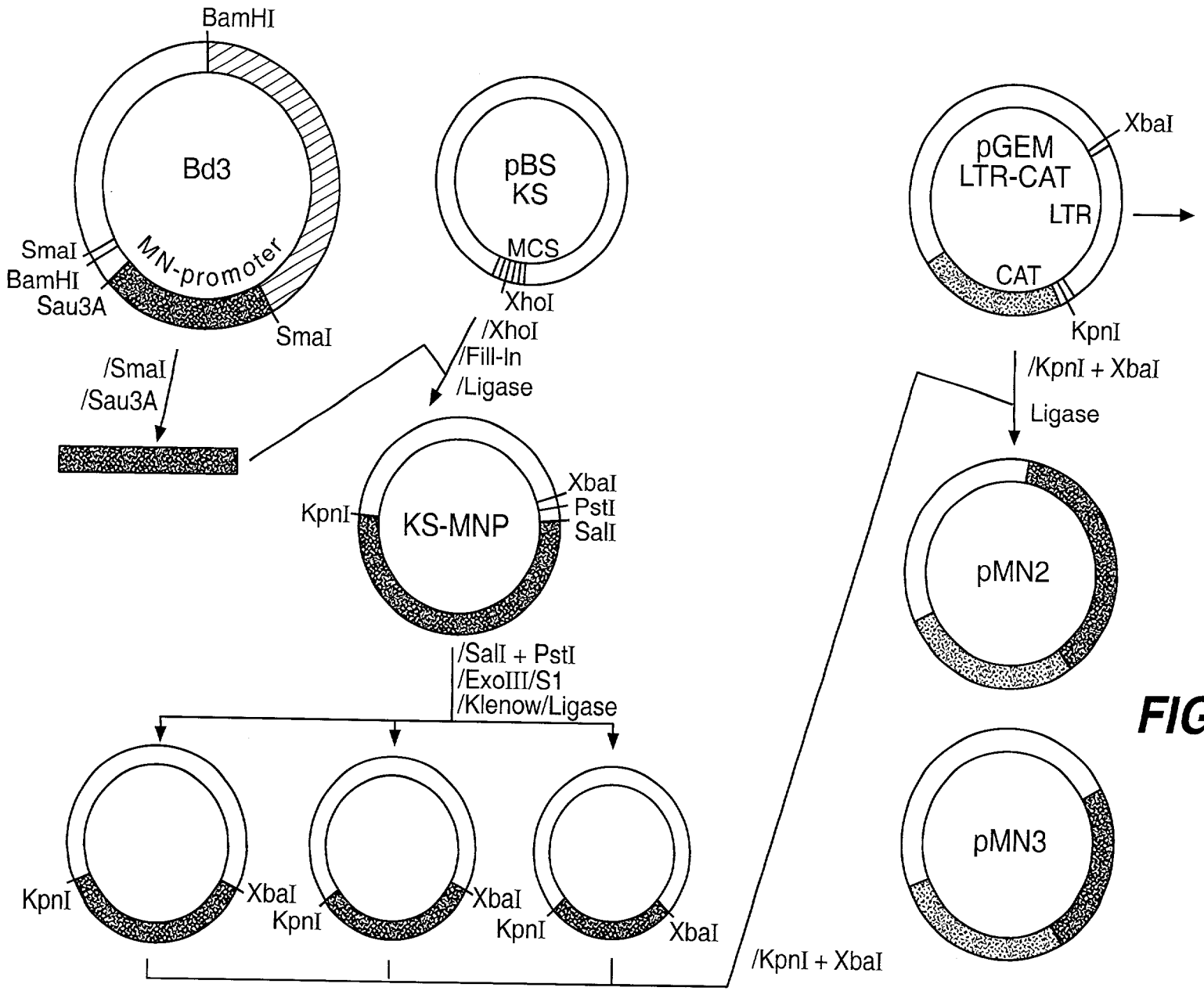
BamHI
Bd3
SmaI
BamHI
Sau3A
MN-promoter
SmaI
/SmaI
/Sau3A
pBS
KS
MCS
XhoI
/XhoI
/Fill-In
/Ligase
KS-MNP
KpnI
XbaI
PstI
SalI
/SalI + PstI
/ExoIII/S1
/Klenow/Ligase
KpnI
XbaI
KpnI
XbaI
KpnI
XbaI
/KpnI + XbaI
pGEM
LTR-CAT
LTR
CAT
XbaI
KpnI
/KpnI + XbaI
Ligase
pMN2
pMN3

FIG._28

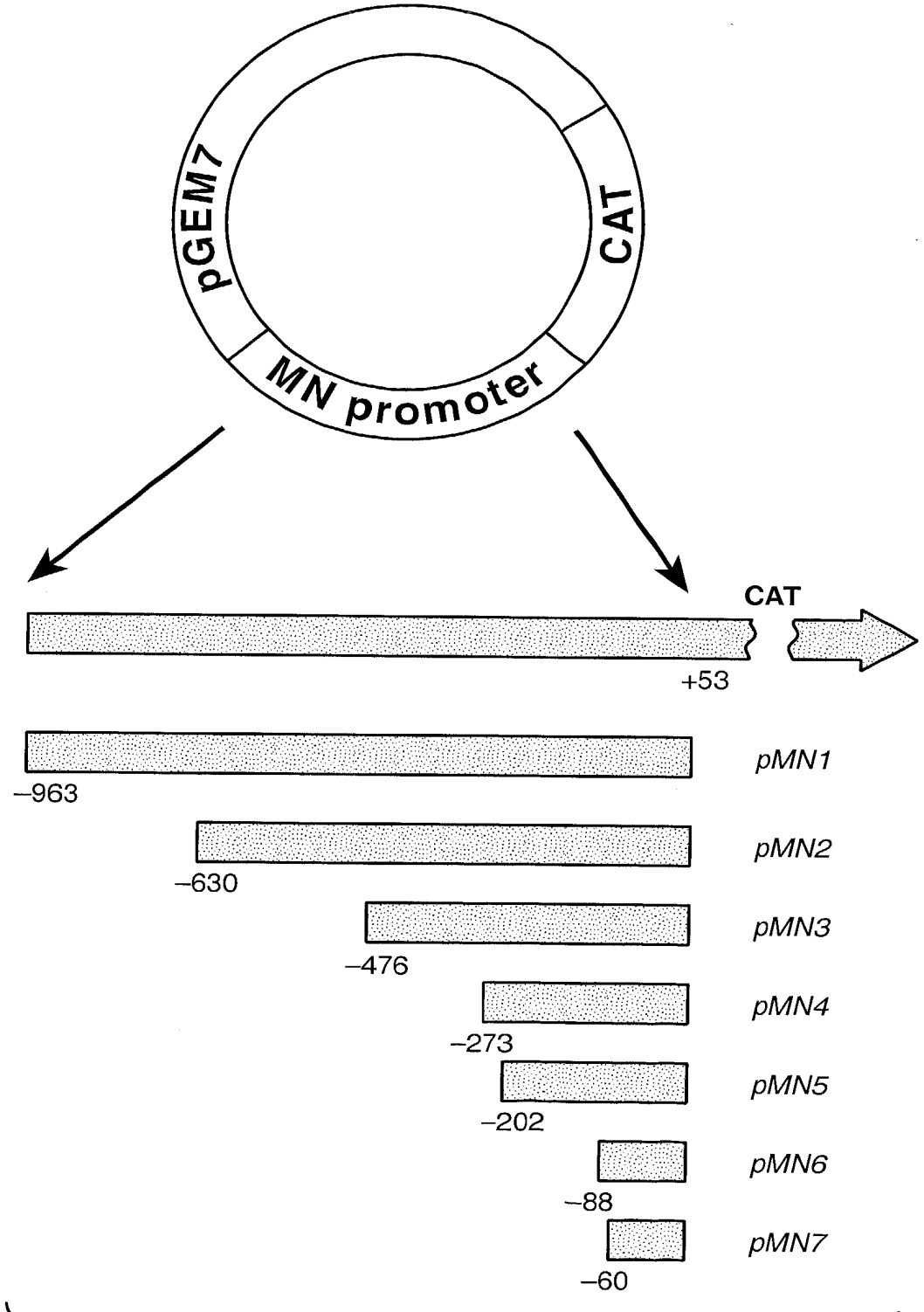
pGEM7
CAT
MN promoter
CAT
+53
pMN1
–963
pMN2
–630
pMN3
–476
pMN4
–273
pMN5
–202
pMN6
–88
pMN7
–60

FIG._29